CHRISTIE

DIGITAL SYSTEMS

INSTRUCTIONS

FOR

INSTALLATION AND OPERATION

OF

SLC SERIES

XENON CONSOLE

SLC 20/30,40,45,45R,70

TD-641 REV. 6.0

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Operator's Manual
Xenon Console, Model SLC 20/30,40,45,45R,70
TD641, Rev. 6.0

Manufactured Under U.S. Patents 3,843,879 and 5,054,909

Other Patents Pending

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1. INTRODUCTION

1.1. CONTENTS OF THE MANUAL

This manual contains installation, operation, and operator maintenance procedures for Christie SLC Xenon Console. The material covered includes:

- General description
- Installation and assembly
- Alignment and checkout procedures
- Operating the SLC
- Troubleshooting.

1.2. WHO SHOULD USE THIS MANUAL?

This manual provides information suitable for various purposes.

All users should read Section 2: Safety Precautions.

WARNING

Do not install, operate, maintain, or repair the SLC Xenon Lamp Console unless you have read Section 2, are familiar with the safety precautions, and have followed all warnings and instructions.

For details on operating the projector and for general information, see:

- *Section 3: General Description*
- *Section 4: Installation Procedures*
- *Section 5: Alignment and Checkout Procedures*
- *Section 6: Operating the SLC.*

Before performing adjustments and periodic maintenance during normal operation, see:

- *Section 4: Installation Procedures*
- *Section 5: Alignment and Checkout Procedures*
- *Section 7: Maintenance and Adjustments*
- *Section 8: Troubleshooting*.

If a problem occurs, see:

- *Section 8: Troubleshooting.*

Additional reference information is contained in the appendices.

1.3. SPECIAL NOTICES

Three kinds of specific notices are used within this manual to emphasize specific information.

1.3.1. WARNING

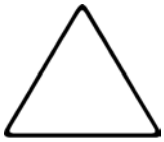
WARNING

WARNING: Indicates the presence of a hazard that can cause personal injury if the hazard is not avoided.

1.3.2. CAUTION

CAUTION: Indicates the presence of a hazard that could cause damage to the system.

1.3.3. NOTE



NOTE: Provides additional information.

2

2. SAFETY PRECAUTIONS

This section highlights the major dangers of working with the SLC Xenon Console. Appropriate safety measures must be taken at all times.

2.1. WEAR PROTECTIVE CLOTHING

WARNING

P O S S I B L E E X P L O S I O N H A Z A R D !

Xenon compact arc lamps are under high pressure. The lamps must be handled with great care. They may explode if dropped or mishandled. Whenever the protective cover is removed from the lamp, authorized protective clothing **must** be worn!

Protective clothing includes, but may not be limited to, rubberized cotton gloves, double-layer 0.040-inch acetate face shield, and quilted ballistic nylon jacket. A Protective Clothing Safety Kit (Part Number 598900-095) is available from Christie. Figure 2-1 lists the contents of the Safety Kit.

WARNING

Wear protective clothing when protective cover is removed from lamp.

Instructions from Christie regarding protective clothing are subject to change. Any local or federal specifications take precedence.

Part Number	Item
598900-092	Safety Jacket
598900-093	Safety Mask
598900-094	Safety Gloves

Figure 2-1: Protective Clothing Safety Kit Contents

2.2. ALLOW LAMP TO COOL

If the lamp has been in use, wait at least ten minutes after shut-off before opening the lamp housing.

WARNING

The ten-minute waiting period allows the internal lamp pressure to drop to a level at which it is safe to work while wearing the authorized protective clothing. Again, **always** wear protective clothing when the protective cover is removed from the lamp.

2.3. DISCONNECT AC LINES BEFORE ENTERING CONSOLE

Turn off the breaker at the building AC power distribution panel before entering the console.

WARNING

Always turn off and disconnect power lines before entering the console. This protects against accidental electrical shock.

2.4. DO NOT LOOK DIRECTLY AT LAMP

NEVER LOOK DIRECTLY AT THE LAMP!

WARNING

Serious and permanent eye damage can be caused by the ultraviolet radiation of the lamp. Never attempt to open the console while the lamp is on. Always follow directions for opening console and exposing the Xenon lamp. (See Section 5.2.)

2.5. AVOID FIRE HAZARDS

WARNING

FIRE HAZARD: Keep hands, clothes, and combustible material away from the concentrated light beam in front of the snood.

Use extreme caution when working around the SLC Xenon Console. Fire danger may arise from heat, electrical current, or the concentrated light beam emitted by the Xenon lamp.

3

3. GENERAL DESCRIPTION

This SLC Xenon Console is a series of projection illumination systems that combine the rectifier DC power supply and projector base with a Xenon lamphousing into a single, integrated unit with a minimum of installation and wiring expense. These consoles are designed for use with any standard 35-mm or 35/70-mm motion picture projector head.

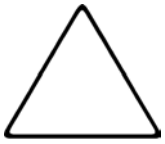
3.1. THE XENON LAMP

The SLC Xenon Console utilizes a highly efficient optical system to obtain maximum light output with extreme ease of operation and high reliability. This is accomplished by using a horizontally operated Xenon lamp within a deep, explosion-proof reflector. For maximum efficiency, the reflector has a computer-generated, aspheric shape. The high-voltage igniter (Item 2 in Figure A-3), required for starting the Xenon lamps, is included within the enclosure.

WARNING

Authorized protective clothing must be worn when protective cover is removed from lamp.

For lamp description, recommendations, and warranty information, see the Christie (or equivalent) lamp instructions.



SLC Consoles are equipped with a double interlock system on the lamp access doors to extinguish the lamp if the enclosure is accidentally opened. Keyed locks are provided on all access doors.

4

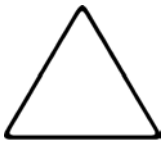
4. INSTALLATION PROCEDURES

4.1. UNPACKING

Follow these instructions if the unit is crated.

Christie recommends that the unit be moved to the installation site before uncrating.

1. Be sure container is upright.
2. Open crate and remove packing.
3. Carefully remove unit from crate.
4. Thoroughly inspect unpacked unit for damage that may have occurred during shipping.



Any damage discovered should be reported to the transportation company at once for inspection and filing of claim.

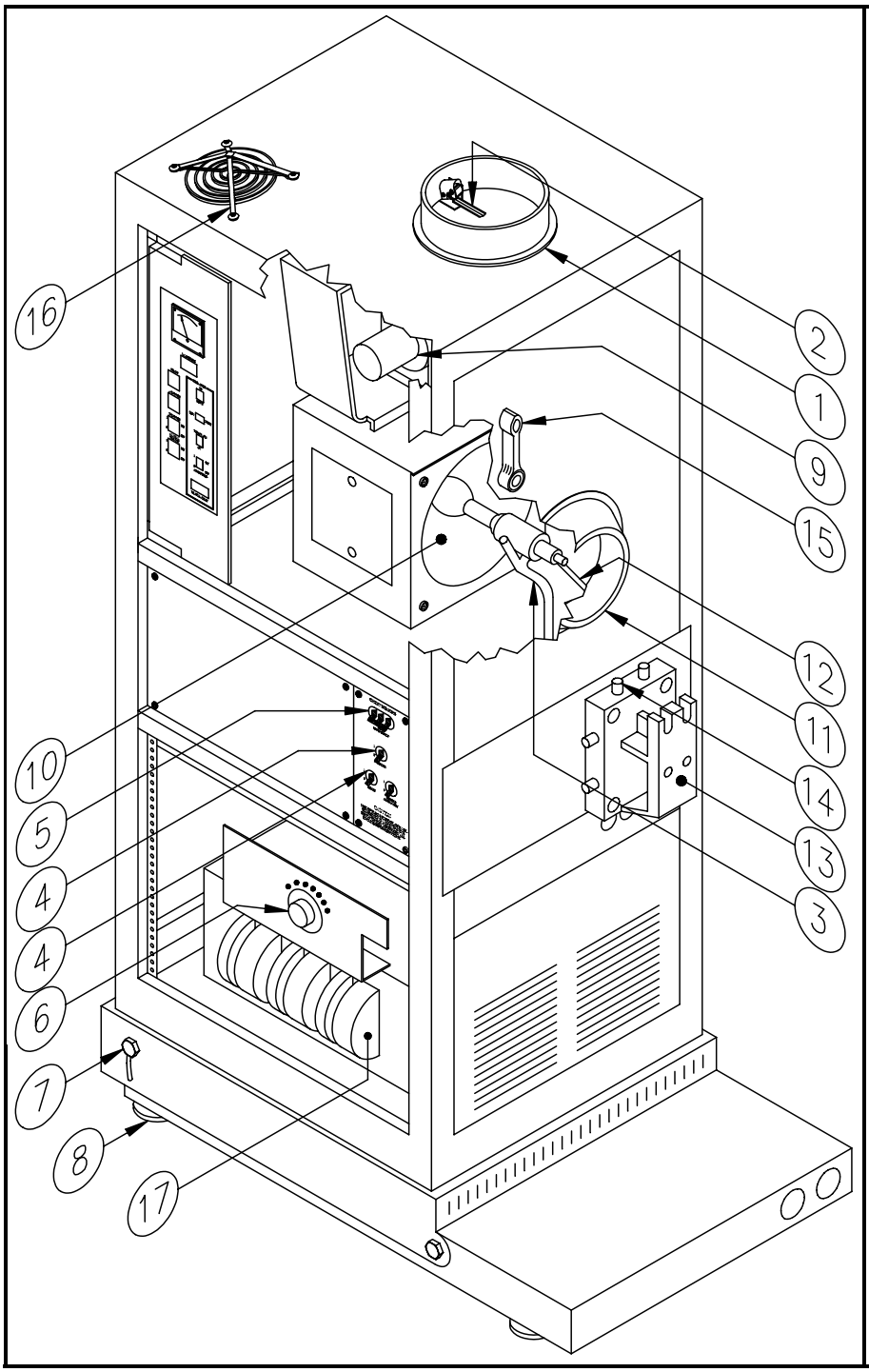
4.2. INSTALLATION

Place console in intended operating location in projection booth.

4.2.1. LEVELING FEET

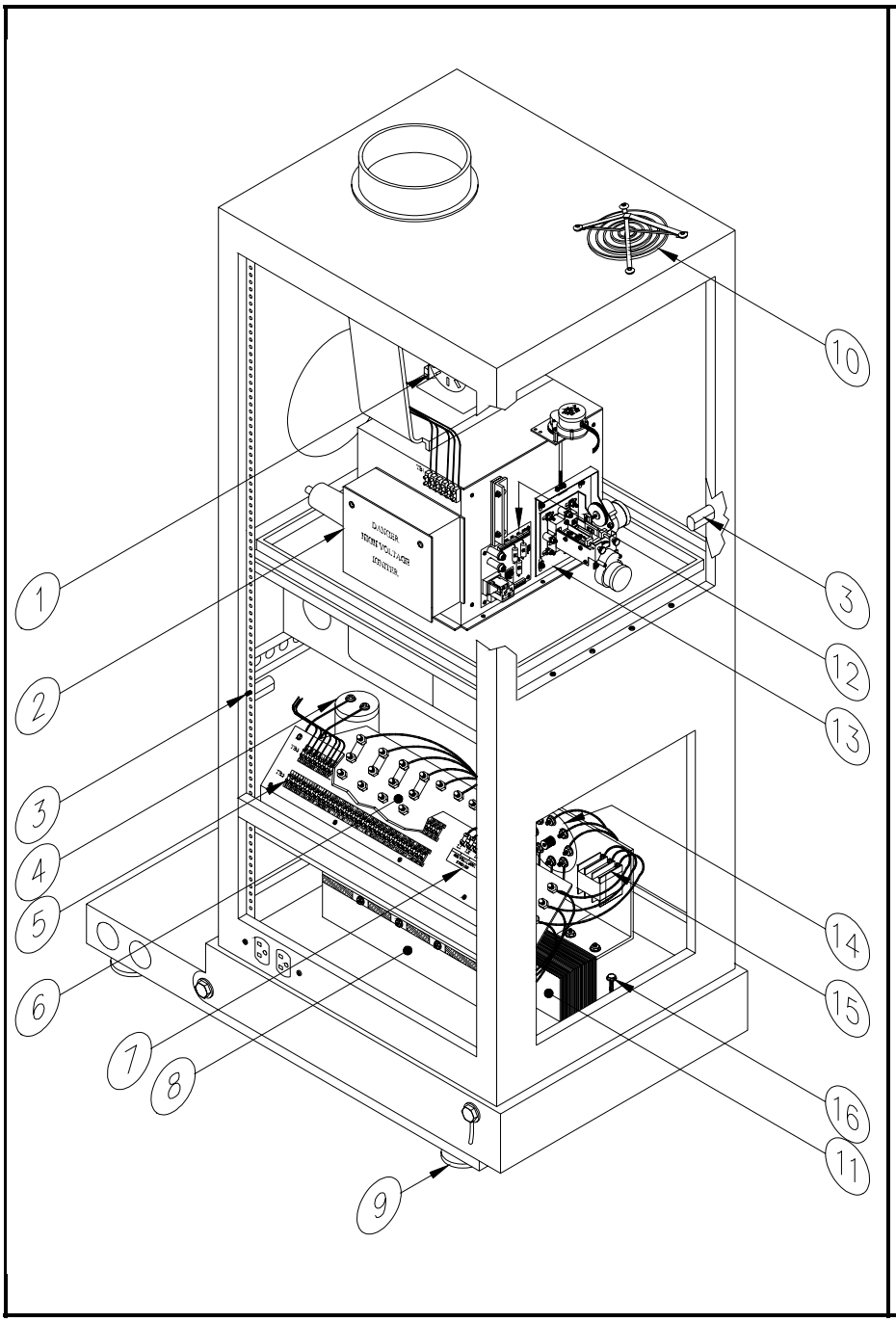
Install four (4) leveling feet by screwing one into each of the four corners underneath base until about 1/2 inch of thread remains exposed. (See Item 8 in Figure 4-1.)

Christie recommends carefully tilting the console to one side to install the first two feet, then tilting it to the other side to install the other two feet. An assistant is required to do this safely.



1: Exhaust Duct Connector (195713-001)
2: Air Switch Assembly (195557-002)
3: Lamp Support, Positive (193959-001)
4: Circuit Breaker, 30 A (573303-005)
Circuit Breaker ,20 A (573102-009)
Circuit Breaker, 15 A (573101-020)
5: Circuit Breaker, 40 A (573304-001)
Circuit Breaker, 30 A (573103-022)
Circuit Breaker, 20 A (573302-003)
6: Tap Switch (111972-002)
7: Tilt Adjust Bolt (515500-177)
8: Leveling Foot (520650-003)
9: Blower (SLC 20/30) (598931-548)
Blower (SLC 40,45,70) (598931-645)
10: Reflector (SLC 20/30) (195206-003)
Reflector (SLC 40/45) (195891-001)
Reflector (SLC 45R) (195710-001)
Reflector (SLC 70) (195572-002)
11: Snood *(SLC 20, 30)* (195954-001)
Snood (SLC 40/45/70) (195415-001)
12: Lamp Connector (+) (191925P001)
13: Projector Mnt. (20/30) (195955-001)
Projector Mnt. (40/45/70) (195738-001)
14: Alignment Adjust (515500-141)
15: Douser Handle (192121-001)
16: Guard Air Intake (195684-001)
17: Power Supply 3kW 208/230v (195463-010)
Power Supply 3kW 380/415v (195463-004)
Power Supply 4kW 208/230v (195464-010)
Power Supply 4kW 380/415v (195464-004)
Power Supply 7kW 208/230v (195556-010)
Power Supply 7kW 380/415v (195556-004)

Figure 4-1: SLC Xenon Lamp Console (Front View)



1: Air Switch Assy. (195557-001)

2: Igniter, IGA-10 (116715-001)
IGA-15M (117124-001)

3: Door Interlock (578000-034)

4: Capacitor *(SLC 20, 30)* (530106-302)
(SLC 40, 45, 70) (530122-009)

5: Terminal Strip (586211-001)

6: Control Assy, 60 Hz *(20, 30)* (114173-002)
50 Hz *(SLC 20)* (114173-011)
50 Hz *(30, 40, 45, 70)* (114173-010)
60 Hz *(40, 45, 70)* (114173-001)

7: Power Input Terminal (586210-601)

8: Heat Sink Assembly *(20)* (114109-002)
(SLC 30) (114109-002)
(SLC 40, 45, 45R, 70) (195569-001)

9: Leveling Foot (520650-003)

10: Fan Guard (598931-496)

11: Transformer,60Hz*(20/30)*(195773-001)
50/60 Hz *(SLC 20/30)* (195773-001)
60 Hz *(SLC 40)* (195774-001)
50/60 Hz *(SLC 40)* (195774-004)
60 Hz *(SLC45/70)* (195775-001)
50/60Hz *(SLC45/70)* (195775-004)
60 Hz *(45R/70R)* (195775-001)
50/60 Hz (45R/70R) (195775-004)

12: Lamp Adjustment PCB
Automotorized (195315-001)
Motorized(195315-002)

13: Lamp Adj., Manual (195800-001)
Motorized (195800-002)
Autofocus Mot. (195800-003)
Autofocus Man. (195800-004)
Motorized Man. (195800-005)

14: Tap Switch Assembly (111972-002)

15: Contactor
120v*(SLC 20, 30)* (571340-006)
120v,*(SLC 40, 45, 70)* (571340-008)
230v, (SLC 20, 30) (571340-007)
230v, (SLC 40, 45, 70) (571340-009)

16: Console Tilt Option (195535-001)

Figure 4-2: SLC Xenon Lamp Console (Rear View)

4.2.2. DOOR PANELS

All three door panels are removable for easier access to the interior of the console during installation and maintenance.

To remove door panel:

1. Unlock key-lock.
2. Open door.
3. Push down on spring-loaded pin hinge.
4. Remove panel.

To install door panel, reverse the above procedure.

4.2.3. VENTING

It is necessary to vent hot exhaust air from console to the outside of the building.

1. Connect a eight-inch inner-diameter, flexible, fireproof ducting material to exhaust duct (Item 1 in Figure A-2) on top of lamphouse.
2. Ensure that there are no obstructions in ducting, and that air intake openings of console are unobstructed.

If ozone-free lamps are used, a short, vertical exhaust stack may be used, provided local codes do not require the exhaust to be vented directly outside.

External exhaust air extraction is required. Minimum and maximum exhaust airflow requirements for all SLC series models are shown in Figure 4-3.

Model	Minimum Exhaust (ft^3/min)	Maximum Exhaust (ft^3/min)
SLC 20	300	400
SLC 30	350	450
SLC 40	450	550
SLC 45, SLC 45R	550	750
SLC 70	750	900

Figure 4-3: Minimum and Maximum Exhaust Airflow Requirements for SLC Consoles

4.2.4. MOUNTING THE PROJECTOR

The SLC Console includes a standard projector mounting bracket for Christie P35 projectors. If any other model projector is to be mounted, contact the Christie factory.

1. Mount projector on projector mounting bracket (Item 13 in Figure A-2).
2. Ensure that projector is level and in line with console before tightening mounting bolts.
3. Verify that all four (4) bolts are installed and securely tightened.

4.3. ELECTRICAL CONNECTIONS

SLC Consoles are factory wired and tested. All functions have been carefully tested and calibrated to prevent problems during installation and operation.

WARNING

Turn off all breakers at the building AC power distribution panel before connecting the console.

4.3.1. VERIFY VOLTAGE

Check the AC voltage shown on the console nameplates. Then measure the AC supply voltages with a voltmeter. Verify that the measured voltages do not differ by more than 10% from the rated nominal values of the unit.

4.3.2. WIRING HOOK-UP

1. Pull 3-phase wires and single-phase and ground wires through one of knock-out holes located on front side on foot of console. Check charts in Figure 4-4 and Figure 4-5 for correct wire size.

WARNING

Grounding wire (green) must be at least as large in diameter as largest wire used for AC power connections.

2. Connect 3-phase wires to Terminal Board TB2–L1, TB2–L2, and TB2–L3.
3. Connect single-phase wires to TB2–L1, Neutral, marked 115V single-phase. Connect ground wire to TB2–ground.
4. Check Schematic and/or Automation Manual for wiring hook-up to TB5. These connections are for projector, sound, changeover douser, and auditorium functions.
5. Hook up all wires as required in above instructions.

AC Wiring Hook-Ups					
AC AMPERES	WIRE DIAMETER (AWG) PER CABLE LENGTH				
PER PHASE	50 FT	100 FT	150 FT	200 FT	250 FT
0 - 10	14	14	12	10	10
11 - 15	14	12	10	8	6
16 - 20	12	10	8	8	6
21 - 25	10	10	8	6	4
26 - 35	8	8	6	4	4
36 - 45	6	6	4	4	3
46 - 60	4	4	4	3	1
61 - 70	3	3	3	2	1
71 - 80	2	2	2	1	1/0

Figure 4-4: Minimum Wire Sizes for AC Connections

DC Wiring Hook-Ups				
DC AMPERES	WIRE DIAMETER (AWG) PER CABLE LENGTH			
PER PHASE	25 FT	50 FT	75 FT	100 FT
20	10	10	8	6
40	10	8	6	4
60	8	6	4	2
80	4	4	2	1
100	4	3	1	1/0
125	3	1	1/0	2/0
150	3	1	2/0	3/0
200	2	1/0	3/0	4/0

Figure 4-5: Minimum Wire Sizes for DC Connections

WARNING

All panels must be secured in place, and all doors must be closed and locked, before operating console.

5

5. ALIGNMENT AND CHECKOUT PROCEDURES

5.1. MECHANICAL ALIGNMENT

When installing an SLC console equipped for 35/70 mm operation, be certain that the optical bench assembly is in the correct sliding position: FORWARD for 70 mm, to the REAR for 35 mm. Contact Christie for more information or for assistance.

All SLC Consoles are optically aligned at the factory. The optical bench or plenum assembly is aligned with an optical laser alignment tool. At installation, if not already mounted, the projector must subsequently be mechanically aligned to the console snood. This is done by adjusting the jackscrews on the projector mounting bracket (Up/Down, Left/Right). (See Item 14 in Figure A-2.)

A satisfactory mechanical alignment can readily be obtained without the use of any special tools.

5.2. INSTALLATION OF XENON LAMP

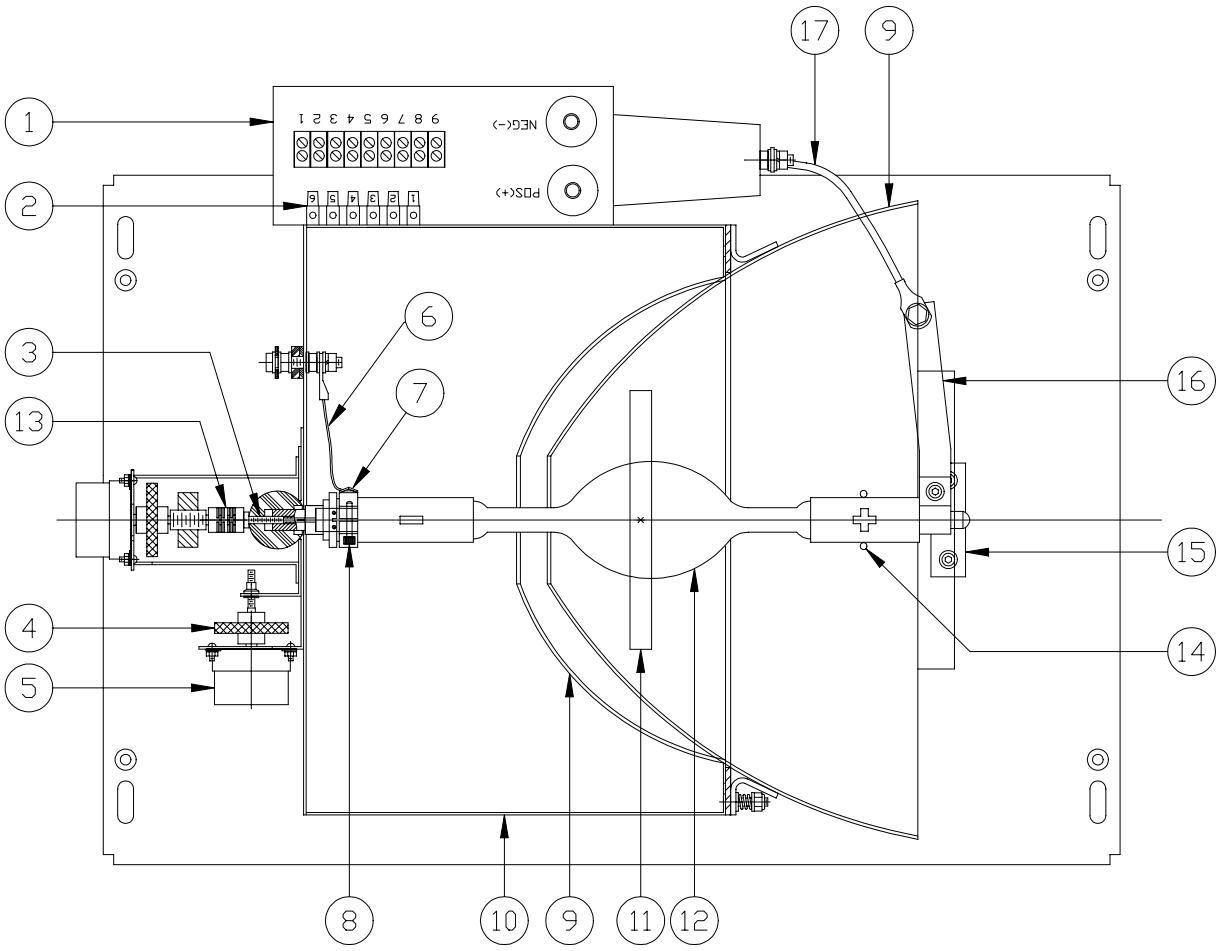
WARNING

Authorized protective clothing must be worn when protective cover is removed from lamp.

1. Turn off all AC power.
2. Open top door on the operating (right) side of console.
3. Remove plenum access cover.
4. Verify that lamp model number and rating correspond to the rating on the console nameplate or lamp rating sticker.
5. Remove lamp from package.

WARNING

Do not touch the quartz body of the lamp with bare hands at any time. Do not apply any bending or twisting force to the quartz body of the lamp.



1: Igniter, IGA-10 (116715-001)
Igniter, IGA-15M (117124-001)
2: Terminal Board, TB4 (586210-602)
3: Focus Screw (195182-001)
4: Wheel, Manual Lamp Adjustment (195190-001)
5: Motor, Synchronous, Lamp Adjustment, 50 RPM (582000-002)
6: Flex Braid Negative Lamp Lead *(SLC)* (195224-002)
7: Negative Lamp Connector (194513-003)
8: Allen Screw, #8-32 x 0.75 in L (598931-046)
9: Reflector, 2000-3000 W Lamp *(SLC 20, 30)* (195206-003)
Reflector, 4500 W *(SLC 45R)* (195710-001)
Reflector, 4000 W *(SLC 40, 45)* (195891-001)
Reflector, 7000 W *(SLC 70)* (195572-002)
10: Cover Support, Plenum (195171P001)
Cover Front Support, Plenum (195172P001)
11: Magnet, Arc Stabilizer (515000-092)
12: Xenon Lamp, 1600 W Adapter (CXL-16S) *
Xenon Lamp, 2000 W (CXL-20) *
Xenon Lamp, 3000 W (CXL-30) *
Xenon Lamp, 4000 W (CXL-40) *
Xenon Lamp, 4500 W (CXL-45) *
Xenon Lamp, 6000 W (CXL-60) *
Xenon Lamp, 7000 W (CXL-70) *
13: Shaft Coupling (195532-001)
14: Lamp Support Arm (193959-001)
15: Insulator, Forward Lamp Support (193958-002)
16: Forward Adapter, Positive Connector (191925P001)
17: Lamp Lead, Positive Connector *(SLC 20, 30, 40, 45, 70)* (195224-002)

*** Specify SLC model when ordering.**

Figure 5-1: Plenum, Top View

6. Remove knurled nut and locking star washer (if present) from negative (cathode) base pin of lamp.
7. Remove protective cover from lamp.
8. Insert threaded cathode end of lamp into negative lamp connector located in rear of plenum. (See Item 7 in Figure A-6.)
9. Screw lamp in place until it bottoms out in lamp connector.
10. Rest positive (anode) end on forward wire cradle.
11. Install positive lamp connector. (See Figure 5-1.)
12. Tighten clamping screws in positive and negative lamp connectors. (See Items 7 and 17, Figure 5-1).

Proper electrical contact is essential in order to prevent resistance in the positive and negative lamp connectors.

13. Verify that positive lead from lamp to igniter does not touch or run close to any metal parts of lamphouse or mirror.

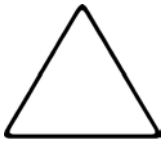
Leads that are too close to any metal parts will cause arcing during starting pulse, and lamp may not ignite.

14. If quartz body of lamp is accidentally touched with bare hands or becomes dirty, clean quartz body of lamp with alcohol and carefully wipe with soft cloth and distilled water.

WARNING

Authorized protective clothing <u>must</u> be worn when cleaning lamp.

15. Replace plenum cover plate and close operating door.



Interlock switches prevent the system from operating if the top door on the operator side and the door on the non-operating side are not closed and locked.

6

6. OPERATING THE SLC

6.1. SAFETY REVIEW

WARNING

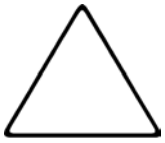
Do not install, operate, maintain, or repair the SLC Xenon Lamp Console unless you have read Section 2, are familiar with the safety precautions, and have followed all warnings and instructions.

- **Never look directly at the Xenon lamp.**
  Serious and permanent eye damage can be caused by the ultraviolet radiation of the lamp. Under no condition should the console be opened except as described in Section 7, below.
- **Do not open the lamp compartment for at least ten minutes after switching the lamp off.**
- **Always wear authorized protective clothing when opening the lamp compartment or handling an unprotected lamp.**
- **Turn off the breaker at the building AC power distribution panel before entering the console.**

6.2. STARTING AND OPERATING THE SLC

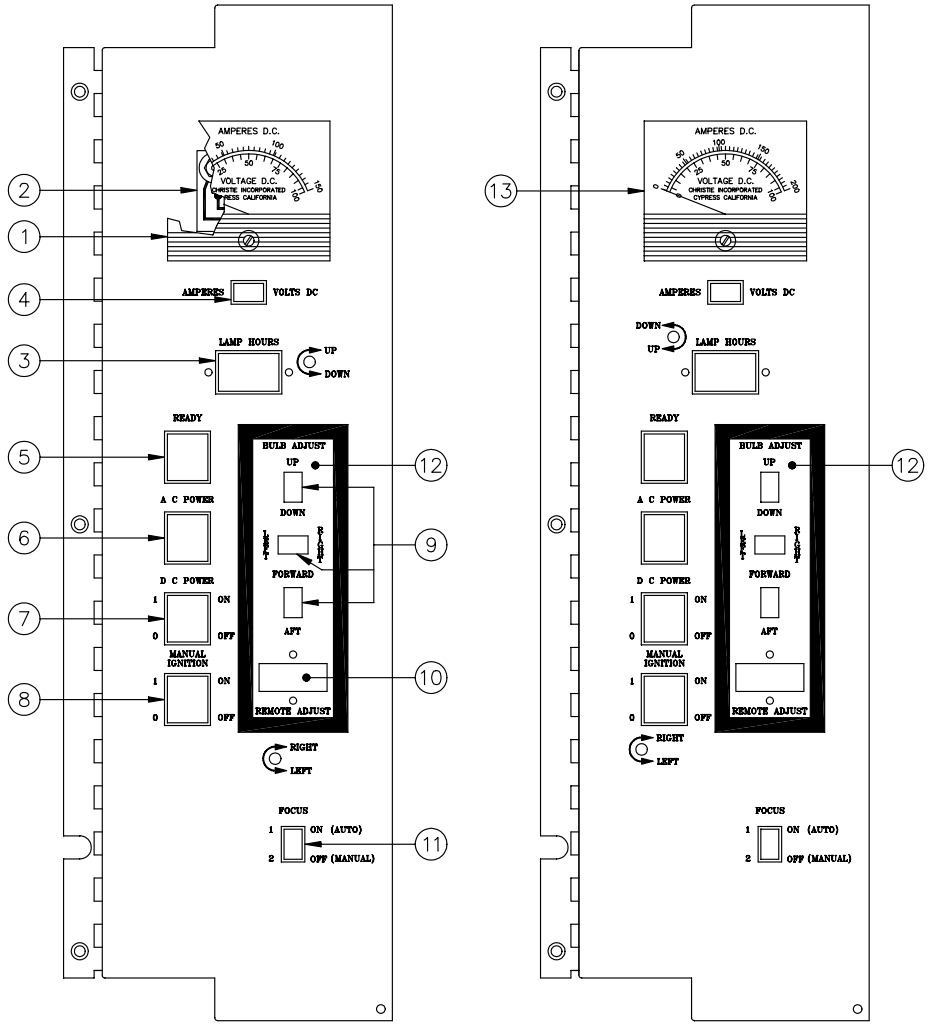
Before starting the lamp, check the rated lamp operating current. The rated lamp operating current is found on the lamp data sheet in the box in which the lamp is shipped.

1. Verify that DC Power ON/OFF Switch (Item 7 in Figure 6-1) is in OFF position.
2. Energize all AC power to console. Pilot lamp (Item 6 in Figure 6-1) will light.



The power supply should not energize until the DC Power ON/OFF Switch is switched ON.

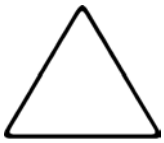
3. Set current adjust on power supply (Item 6 in Figure 4-1) to medium position.
4. Verify that lamphouse cooling is operating. Interlock ready light (Item 5 in Figure 6-1) should be ON, indicating that interlock circuit is closed.



SLC 20, 30 **SLC 40, 45, 70**

1: Meter, 150 Amp (535112-321) 2: Volt/Ampere PCB (195643-0010 3: Timer, 120 VAC, 60 Hz (581399-008) Timer, ET, 120 VAC, 60 Hz (581399-015) Timer, ET, 120 VAC, 50 Hz (581399-016) Timer, ET, 240 VAC, 60 Hz (581399-017) 4: Rocker Switch, SPDT (578712-002) 5: Indicator, Green, 120 VAC (195138-001) Indicator, Green, 250 VAC (546700-054) 6: Indicator, Amber, 380 VAC (195139-001) Indicator, Amber, 440 VAC (195139-002) Indicator, Amber, White Base (546700-038)	7: Rocker Switch, DPST, ON/OFF (578900-026) 8: Rocker Switch, DPST; MOM ON (578900-027) 9: Rocker Switch, SPDT; MOM (578900-040) 10: Terminal Receptacle (524310-006) 11: Rocker Switch, SPDT; ON/ON (578900-042) 12: Control Panel, Manual (195756-001) Control Panel, Motorized, Auto-Focus (195756-002) Control Panel, Motorized Manual and Auto-Focus Manual (195756-003) 13: Meter, 200 Amp (535112-317)

Figure 6-1: Control Panel



If the light is not on when the pilot lamp (Item 5 in Figure 6-1) is on, check for an open switch (door switch, blower switch, or exhaust stack switch) in the interlock circuit.

5. If Automation Control is not used, set DC Power ON/OFF switch to ON position.

   If Automation Control (automatic remote control) is used, leave AC ON/OFF switch in OFF position. Lamp operation is controlled by automation relay. If this relay malfunctions, the lamp can be ignited by setting DC Power ON/OFF Switch to ON.

6. Verify that douser handle (Item 15 in Figure 4-1) is closed (in UP position).
7. Turn DC Power ON/OFF Switch to ON position. Lamp will ignite automatically. If lamp does not ignite, momentarily press the Manual Start Button (Item 8 in Figure A-1) to strike lamp.
8. Check ammeter reading and verify that rated lamp current is not exceeded.

WARNING

Do not allow the current to exceed the rated maximum lamp current or be any lower than 10% of that value.

9. If current is too high or too low, use tap switch to adjust power supply to proper current. If, after ten-minute warm-up period, correct current cannot be obtained with tap switch:
   a) Turn unit off.
   b) Turn off AC at the building panel.
   c) Open left side door of console.
   d) Change Hi-Lo links (see Item 6 in Figure 2-1) as necessary.

WARNING

Turn the DC Power ON/OFF Switch to OFF before rotating the tap switch.

10. Extinguish lamp by turning DC Power ON/OFF switch to OFF position.

WARNING

Do not service the power supply until it has been turned off for at least two (2) minutes. This allows the capacitors to discharge.

6.3. OPTICAL ALIGNMENT AND ADJUSTMENT

Repeat this procedure every time a lamp is changed. (See illustrations in Figure 6-2.)

1. After lamp has been started and operated as described in Section 6.2, open douser. Observe dark spot projected on screen.
2. Using control panel (Figure 6-1), adjust lamp focus until dark spot is clearly defined.
3. Center dark spot using vertical and lateral adjustments (Item 9 in Figure 6-1).
4. Move lamp forward. Light intensity should be equal on both sides of dark spot. If light intensity is not equal on both sides of dark spot, use vertical and/or lateral adjustments to balance light intensity.
5. When light intensity is balanced, move lamp back through FOCUS. Light intensity should again be equal on both sides of dark spot.

If light intensity is not equal on both sides of dark spot, recheck Section 5.1 (Mechanical Alignment) and repeat Steps 1 – 5.

6. Close the douser and replace the projector lens in the projector.
7. Again open the douser and make final lamp adjustments, if necessary, to obtain maximum and uniform light on the screen.

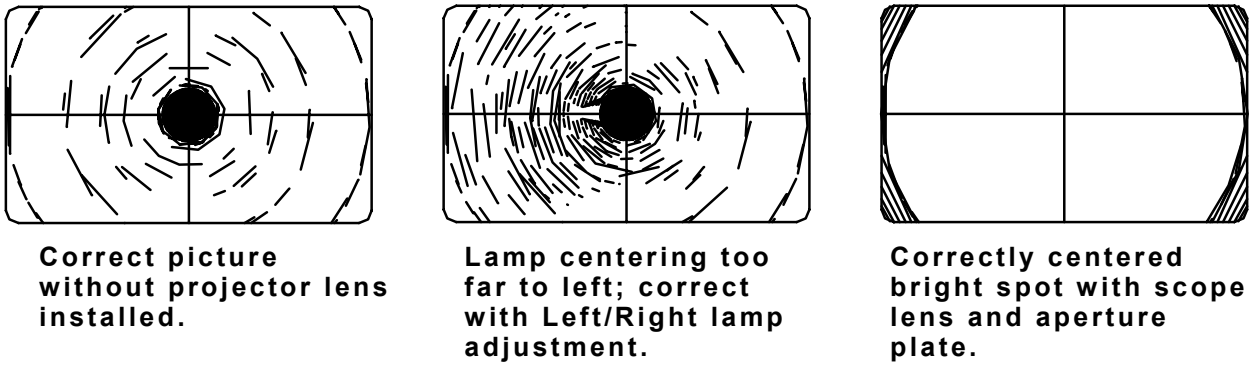

Correct picture without projector lens installed.
Lamp centering too far to left; correct with Left/Right lamp adjustment.
Correctly centered bright spot with scope lens and aperture plate.

Figure 6-2: Optical Alignment of Xenon Lamp

6.4. TILT ADJUSTMENT

The SLC Console is optionally equipped with a jackscrew for easy tilt adjustment. It is located in the bottom rear of the console, and is accessible from either side. (See Item 16 in Figure 4-2.)

1. Loosen all four (4) hold-down bolts. (See Item 7 in Figure 4-1.)
2. Turn jackscrew using 3/4-inch wrench or ratchet. Turn jackscrew clockwise to tilt console downward. Turn jackscrew counterclockwise to tilt console upward.
3. After reaching correct tilt angle, securely tighten all four hold-down bolts.

6.5. REPLACING THE LAMP

In accordance with safety precautions, always be certain that the lamp has cooled for at least 10 minutes before replacing it.

WARNING

Authorized protective clothing must be worn when replacing lamp.

6.5.1. REMOVING THE LAMP

Christie recommends that lamps be replaced before running time exceeds 120% of warranted lifetime. Check running time using elapsed time indicator on control panel (Item 3 in Figure 6-1).

1. Loosen set screws on positive and negative lamp connectors.
2. Unscrew lamp and remove from reflector. **Immediately** put protective cover on lamp.
3. Record hours that lamp has been used.

Record the elapsed time reading for the old lamp when installing a new lamp.

6.5.2. INSTALLING A NEW LAMP

Install the new Xenon lamp according to the directions in Section 5.2.

6.5.3. DEFECTIVE LAMPS

Defective lamps under warranty are to be returned to the dealer who provided the lamp in their protective cover and proper packing. They must be returned to Christie. The Warranty Claim Forms supplied with the lamp must be filled out completely. All portions of the failed lamp including electrodes must accompany the lamp to aid Christie in evaluating the defect.

7

7. MAINTENANCE AND ADJUSTMENTS

WARNING

Wear protective clothing when protective cover is removed from lamp.

7.1. BEFORE OPENING THE CONSOLE

Perform these checks at least every 60 days or 500 hours.

WARNING

Turn off the breaker at the building AC power distribution panel before entering the console.

1. Check contact surfaces of positive (anode) and negative (cathode) connections for cleanliness at regular intervals. Clean electrical contact surfaces as necessary to prevent contact resistance from scorching connectors.
2. Clean air intake openings.
3. Verify that all electrical and lamp connections are tight.

7.2. CLEANING OPTICAL SURFACES

Repeated cleaning of optical surfaces can be more harmful than helpful. Clean only when surfaces are excessively dirty.

The exposed optical surfaces of the lamphouse occasionally require cleaning. For optimum system performance, inspect mirror surface for cleanliness every two weeks.

WARNING

Always remove the lamp before cleaning the reflector.

7.2.1. CLEANING DUST

For surfaces that are dusty but do not have smudges, fingerprints, or grease marks:

1. Brush dust from surface with camel-hair brush.
2. Blow remaining dust away with compressed air.

7.2.2. CLEANING GREASE

For surfaces that are smudged or have oil or grease smears:

1. Moisten cotton pad with light detergent solution. Pad should be well moistened but not dripping wet.
2. Gently swab exposed lens or mirror surface, using spiral motion and working from center outward toward edge of surface.
3. Sponge up moisture with cheesecloth or lens tissue.

Always sponge with fresh cheesecloth or lens tissue. Do not wipe with material that has been used before. Throw cheesecloth or lens tissue away after one use.

4. Dampen cotton pad with methyl alcohol. Wipe surface, using spiral motion from center to edge, in one continuous motion.
5. Dry exposed surface with dry cotton pad or with lens tissue.
6. Repeat procedure above as required.
7. When exposed lens or mirror surface is dry and clean, loosen any remaining lint with brush and blow clean with compressed air.

7.3. MAINTAINING OTHER SURFACES

Surfaces other than the optical surfaces require periodic maintenance to keep the lamphouse in good operating condition. These items are:

- Blower
- Igniter
- Air flow interlocks.

These items should be cleaned approximately every six months under normal environmental conditions. Equipment in very dusty or otherwise contaminated areas may require more frequent maintenance.

7.3.1. BLOWER

The blower impeller and motor should be cleaned to prevent build-up of contaminant on both the blower impeller surfaces and on the blower motor. Proper operation of the lamp is dependent on providing adequate cooling air flow. A dirty blower may not provide proper air flow, causing the lamp and lamphouse to operate at temperatures that are higher than intended.

1. Clean loose dirt from blower impeller with vacuum cleaner.
2. Use brush with hot water and suitable detergent to remove dirt that cannot be vacuumed off.

When cleaning the impeller, be careful not to bend the blades or to loosen the balancing weights.

3. Every six months, lubricate blower motor by applying three to four drops of light machine oil to oil holes in motor housing.

7.3.2. IGNITER

Periodically clean the high voltage terminal and insulator to prevent accumulation of dust or dirt.

7.3.3. AIR FLOW INTERLOCKS

Periodically check and, if necessary, clean the air flow interlock vanes to remove accumulated dirt.

7.4. ALIGNING LAMPHOUSE WITHOUT ALIGNMENT TOOLS

1. Inspect reflector and lens and clean if necessary.
2. Inspect lamp for dirt or fingerprints. Clean if required.
3. Center lamp adjustments in rear of lamphouse to midpoint of their range.
4. Install lamp in lamphouse.
5. Use ruler to verify that positive end of lamp is centered in reflector from top to bottom and side to side. If not centered, adjust to center position by adjusting the front lamp support.
6. For best results: With ruler, verify that positive end of lamp is centered left to right in reflector within $^{1}/_{16}$ in. If not centered, adjust front lamp support to center lamp.

The following adjustments must be made with the rear lamp adjustments centered.

7. When all preliminary adjustments are satisfactory, connect positive connector to anode ferrule. To prevent arcing, keep anode lead clear of any metal parts.
8. With anode centered, firmly tighten anode and cathode clamping screws.
9. Replace plenum cover and doors of lamphouse.
10. Set current control to lowest tap and start lamphouse.
11. Install scope lens and aperture.
12. Put light on screen and adjust lamp focus for maximum light.
13. Move console base sideways and adjust tilt until aperture is centered on screen.
14. Remove projector lens and adjust lamp "left and right." If bright dot does not pass through center of dark shadow, adjust lamp "up and down" until it does. (See Figure 6-2.)
15. Adjust bright dot until it is centered behind dark shadow. (See Figure 6-2.)
16. Replace scope lens.
17. Adjust lamp focus until large bright spot with dark corners appears on screen. (See Figure 6-2: Optical Alignment of Xenon Lamp). Spot must be centered and four corners must be equal size. If spot is not centered, move projector left or right and up or down, with respect to console, until spot is centered. Do not reposition lamp.
18. Repeat steps 14 through 17 until bright spot fills all four corners at same time lamp focus control is adjusted. Barely fill corners with light and then stop. This is point of maximum light.
19. Adjust current tap switch on rectifier for desired amount of light within current rating of lamp.

7.5. XENON LAMP AUTOFOCUS ADJUSTMENTS (OPTION ABF)

The lamp autofocus is designed to give optimum light output in both scope and flat formats. After proper settings have been established, the motorized lamp adjustment automatically readjusts the lamp to its designated position. These adjustments are obtained by setting the two limit switches (Items 15 and 16 in Figure A-1) to their proper positions.

7.5.1. AUTOFOCUS ADJUSTMENT PROCEDURES

1. Connect signal wires.

   24 VDC

   Connect two signal wires (Scope/Flat) from automation programmer to TB6-1 and TB6-2. (See Item 25 in Figure A-1.) Set switch S13 to DC mode. Provide 24 VDC pulse (+/-) to activate latching relay for scope/flat format.

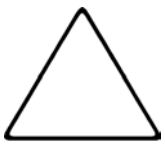
115 VAC
Connect three signal wires (Scope/Flat) from automation programmer to TB6-1, TB6-2, and TB6-3. (See Item 25 in Figure A-1.) Set switch S13 to AC mode. Provide 115 VAC to TB6-1 or TB6-4 to activate latching relay for scope/flat format.

2. Turn autofocus switch (Item 11 in Figure 6-1) to ON (1).
3. Activate automation programmer for flat position. Observe that lamp focus adjustment moves lamp forward. If the lamp adjustment moves in reverse:

   24 VDC
   Exchange the position of the two wires.

   115 VAC
   Exchange the position of the two wires of TB6-1 and TB6-3.

   After correct travel has been obtained, proceed to next step.
4. Turn Autofocus switch to OFF (0).
5. Obtain desired light level on screen for flat format by adjusting up/down, left/right, and forward/aft switches (Items 9 in Figure 6-1).
6. Adjust flat adjustment thumbscrew (Item 18A in Figure A-1): If green light (Item 26 in Figure A-1) is ON, turn thumbscrew counterclockwise until light goes out. If green light is not ON, turn thumbscrew clockwise until green light comes ON. Turn thumbscrew back and forth several times to determine exact position where green light turns ON. This position is correct setting for flat format.
7. Activate automation for scope format. Set desired light level on screen for scope format by adjusting up/down, left/right, and forward/aft switches (Items 9 in Figure 6-1).
8. Adjust scope adjustment thumbscrew (Item 18B in Figure A-1): If red light (Item 27 in Figure A-1) is ON, turn thumbscrew clockwise until light goes out. If red light is not ON, turn thumbscrew counterclockwise until red light comes on. Turn thumbscrew back and forth several times to determine exact position where red light turns ON. This position is correct setting for scope format.
9. Turn autofocus switch to ON (1).
10. Activate automation several times between scope and flat formats to verify that autofocus adjustment moves to scope and flat settings as required.
11. Verify that light levels on screen stay at maximum or desired level for both scope and flat formats.



The lamp autofocus operates only when the autofocus switch is in the ON position. Manual lamp adjustment is possible only when the autofocus switch is in the OFF position. All autofocus adjustments must be made with the autofocus switch in the OFF position. The red and green lights do not light when the Autofocus switch is in the ON position.

7.6. OPTIMIZER REFLECTOR

The SLC OPTIMIZER reflector is designed to give maximum performance (light output) when the Xenon lamp has reached the optimum operating temperature for arc size and stability (two to three minutes). Ensure that the DC current setting to the lamp is correct and the lamp temperature has stabilized before making final autofocus adjustment.

WARNING

Do not allow the current to exceed the rated maximum lamp current or be below 10% of that value.

7.7. ELECTRICAL CONNECTIONS

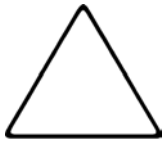
It is very important that all electrical connections are mechanically secure or tight. The DC connections are especially important due to their relatively high current and low voltage. A loose lamp connection causes overheating of the lamp and premature failure. A periodic inspection should be made regularly, at least every 60 days.

7.8. AIRFLOW

Proper airflow for cooling the Xenon lamp is very important to sustain lamp life. Clean blower wheels and oil blower motors at least every six months as described in Section 7.3.1. Be careful not to disturb or remove the balance weights on the blower wheel while cleaning.

7.9. REMOTE LAMP ADJUSTMENT CONTROL (OPTION RBA)

The remote lamp adjustment control unit is equipped with a six-foot umbilical cord. This cord enables the operator to stand at the viewport while operating the lamp adjustments to attain maximum screen illumination. The RBA is a plug-in unit, and can be moved between SLC lamphouses.



The lamp autofocus switch must be in the OFF position to operate the remote lamp adjustment unit.

8

8. TROUBLESHOOTING

This section helps the user to identify and, where possible, correct system malfunctions in SLC Xenon Consoles. The sections below are organized by malfunction type. For each malfunction, the manual lists symptoms associated with possible problems, and then presents a table containing probable causes and steps to be taken to correct the problem.

Christie suggests that, when following these troubleshooting procedures to correct a problem, users:

1. Copy the appropriate tables
2. Record observations in the rightmost column
3. Include annotated copies with maintenance and repair records for future reference.

8.1. MALFUNCTION: POWER SUPPLY DOES NOT START

The system does not power up.

	Probable Cause	Corrective Action	Date/Remarks
A	No AC (3-phase) voltage at TB2.	Check disconnect switch or circuit breaker at AC distribution panel.	
B	Phase voltages are not equal at TB2.	Measure TB2-L1, L2, and L3 for missing or low voltage; correct loose or damaged wire.	
C	Ready lamp is not on, interlock or blower switches not functioning.	Check that all switches are closing properly. Continuity each switch if necessary.	

Table 8-1: Troubleshooting for Power Supply Does Not Start

8.2. MALFUNCTION: LAMP DOES NOT IGNITE

The system powers up, but the lamp does not ignite.

	Probable Cause	Corrective Action	Date/Remarks
A	Ready lamp is not on.	Check all interlock or blower switch circuits.	
B	DC supply is not set to proper value.	Increase lamp current by adjusting power supply tap switch.	
C	Failed power supply.	With DC power switch ON (open circuit), measure across igniter (+) and (-) positions for 85VDC minimum. If minimum voltage is not present, check power supply output.	
D	Failed igniter	Listen for igniter buzz when manual start button is pushed. If buzz is heard, replace spark gap or AC transformer in igniter.	
E	Igniter relay has failed.	Listen for relay to pull in as start button is pushed. If relay does not activate, measure coil voltage and/or check relay circuit. If no output voltage, replace defective relay.	
F	Lamp failed.	Inspect lamp and replace.	

Table 8-2: Troubleshooting for Lamp Does Not Ignite

8.3. POWER SUPPLY OUTPUT IS LOW OR NOT STEADY

Power is erratic.

	Probable Cause	Corrective Action	Date/Remarks
A	One phase open or low at TB2 or TB1	Inspect all DC and AC connections. Measure voltages at TB2–L1, TB2–L2, and TB2–L3, then at TB1–HI/LO links. Check AC source or repair circuit.	
B	Failed diode	With power supply OFF, check for open or short in diodes. Use ohmmeter and reverse leads. If both measurements are below 1 Ω, diode is shorted. If above 10 kΩ, diode is open. Replace diode.	

Table 8-3: Troubleshooting for Power Supply Output Low or Not Steady

WARRANTY

COVERING THEATRE PRODUCTS MANUFACTURED BY

CHRISTIE DIGITAL SYSTEMS

(herein referred to as "Christie")

Christie warrants the apparatus sold to the extent of the parts necessary to correct any defect in workmanship or materials which may develop under proper or normal use for a period of one (1) full year *(90 days on electric motors)* from date of installation *(except as noted below)*, but not to exceed eighteen (18) months from date of shipment from Christie**.** Christie reserves the right to have the apparatus returned, freight prepaid, to the Christie factory to effect the warranty repairs.

Replacement parts for warranty repairs will be shipped promptly by Christie**,** FOB factory, and invoiced to the customer. Credit will be issued upon return of the defective part or parts, prepaid, to the Christie factory. Note: In the event that returned parts are found to continue to meet Christie specifications, no credit will be issued.

The above shall constitute a fulfillment of all Christie liabilities in respect to said apparatus.

This warranty does not cover the following items:

Special customer specified purchased parts or materials; also, Xenon, mercury, and other types of lamps *(lamps)*.

Christie shall not be liable for any consequential damages except:

Christie will replace standard Christie reflector under warranty in lamphouse damaged by failure of Christie Xenon lamp during its warranted life and if properly operated, under the following terms and conditions:

A. If the original reflector installed is *less than one year old, full credit* will be issued.

B. If the original reflector is *more than two years, but less than three years old, one-quarter credit* will be issued.

C. After *three years* from date of original installation, *no credit* will be issued.

Appendix A

Appendix A: Assembly Diagrams and Parts Lists

Appendix A contains diagrams and parts lists for these major components of the SLC Xenon Lamp Console:

1. Autofocus Adjustment Assembly
2. SLC Console (Front View)
3. SLC Console (Rear View)
4. Control Panel
5. Manual Lamp Adjustment Assembly
6. Plenum (Top View)
7. Power Supply.

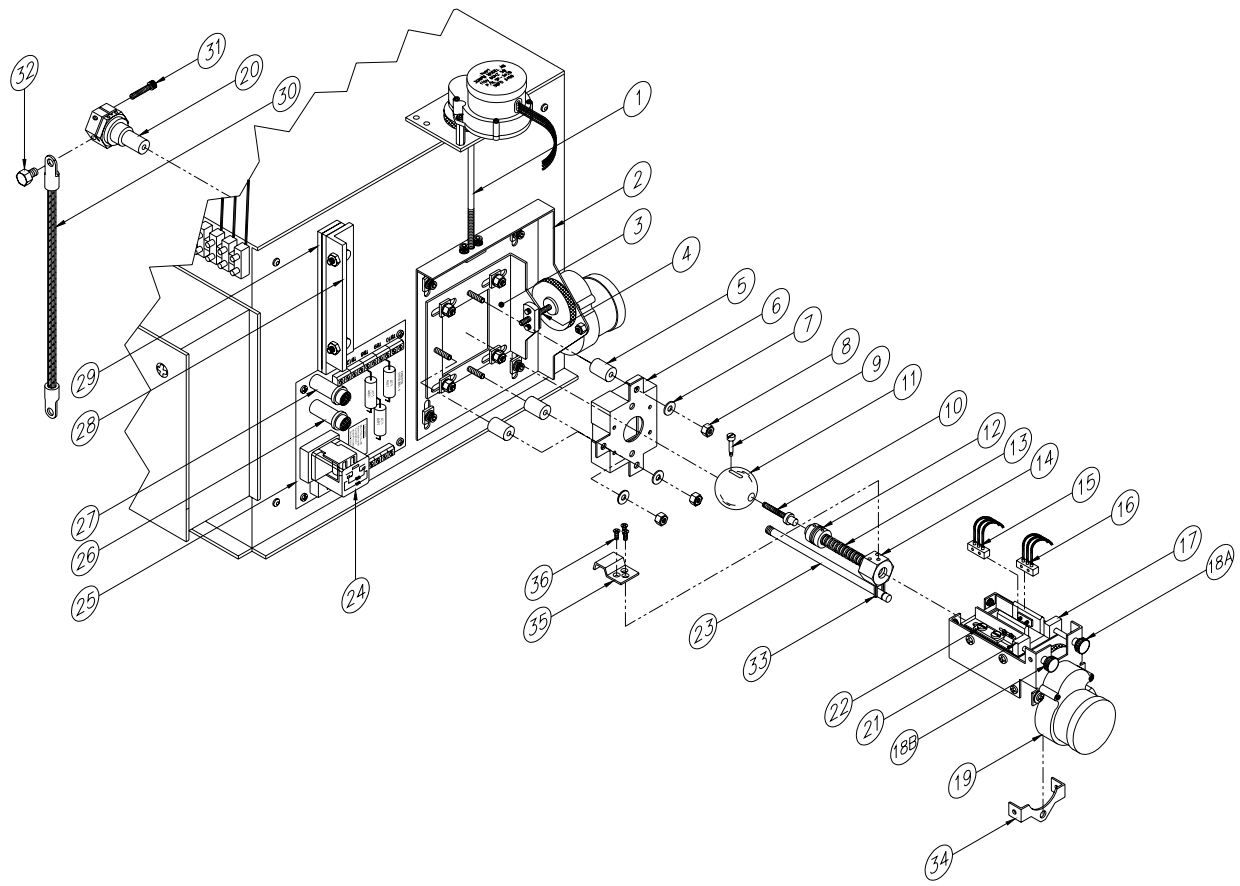


Figure A-1: Autofocus Assembly

#	Description	Part Number
1	Lamp Adjustment Screw, Long	195145-001
2	Plate, Vertical Adjustment	195758-001
3	Plate, Horizontal Adjustment	195753-001
4	Lamp Adjustment Screw, Short	195145-002
5	Spacer, 0.171 in ID x 0.4375 in OD	598931-825
6	Box, Horizontal Adjustment	195752-001
7	Washer, Flat, #8	515819-303
8	ESNA Nut, 8-32, Nylon Steel	--
9	Screw, Shoulder 4-40 x 0.5 in L	598931-619
10	Adjustment Screw, Lamp Rear Adjustment	195182-001
11	Pivot Ball	194512-002
12	Helical Coupling, 6.0 mm ID	195532-001
13	Screw-Switch, Adjustment	195331-001
14	Nut-Switch, Adjustment	195329-001
15	Switch, Limit Assembly	578000-073
16	Switch, Limit Assembly	578000-073
17	Switch Mounting Plate, (Left)	195759-002
18	Switch Adjustment Screw, 8-32 x 2.0 in L	--
	Switch Adjustment Knob	598931-526
19	Motor, Synchronous Reversible	582000-002
20	Rear Adapter Lamp	194513-003
21	Switch Mounting Plate, (Right)	195759-001
22	Screw, Shoulder, Slotted	195346-001
23	Pivot Switch Adjustment	195298-001
24	Relay, Magnetic Latch, 120 VAC, 10 Amp	571210-003
	Relay, Magnetic Latch, 24 VDC, 10 Amp	571210-004
25	PCB Assy, Lamp Adjustment (Auto Motor.)	195315-001
	PCB Assy, Lamp Adjustment (Motorized)	195315-002
26	Indicator Lamp, Green	546700-034
27	Indicator Lamp, Red	546700-025
28	Shunt, 200 Amp *(SLC 45R, 70)*	111786-001
	Shunt, 150 Amp *(SLC 20, 30, 40)*	113460-001
29	Insulator, Shunt; 0.1875 in Thk	195243-001
	Insulator, Shunt; 0.125 in Thk	195243-002
30	Flex Braid Negative Lamp Lead *(CXC)*	195224-002
31	Screw, Socket Head Cap, 8-32 x 0.750 in L	598931-046
32	Screw, Hex Head, 1/4-20 x 0.375 in, Steel	--
33	Roll Pin 3/32 x 0.750 in L	598931-503
34	Bracket, Adjustment Switches	195247-001
35	Actuator, Switch	195330-001
36	Screw, Phillips Flat Head 4-40 x 1/4 in L	HS04004-04

Table A-1: Parts List for Autofocus Assembly

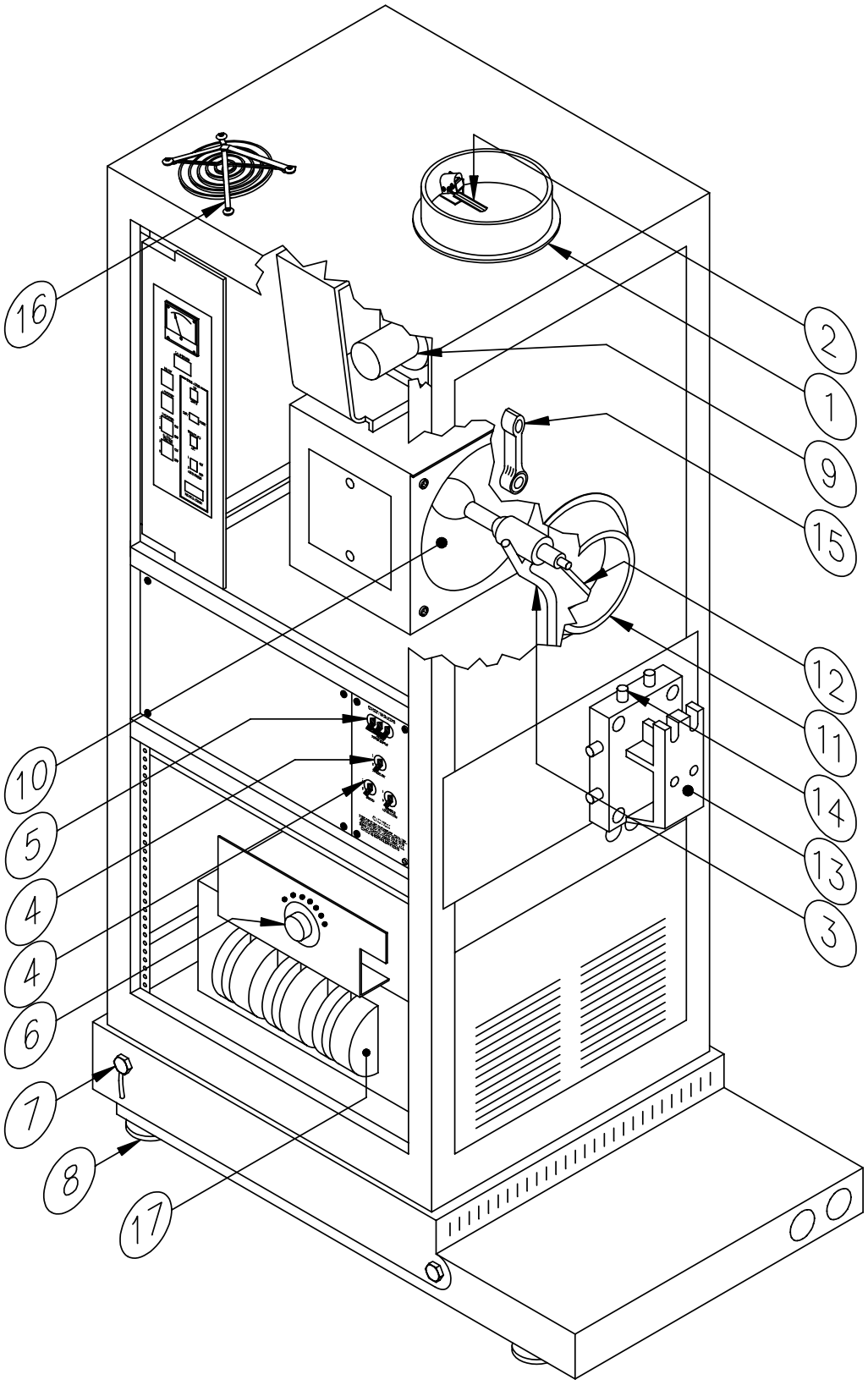


Figure A-2: SLC Xenon Lamp Console (Front View)

#	Description	Part Number
1	Exhaust Duct Connector, 8.0 in	195713-001
2	Air Switch 1000 Assembly	195557-002
3	Lamp Support Arm, Positive	193959-001
4	Circuit Breaker, 1-Pole, 15 Amp	573101-020
	Circuit Breaker, 1-Pole, 20 Amp	573102-009
	Circuit Breaker, 1-Pole, 30 Amp	573103-022
5	Circuit Breaker, 3-Pole, 20 Amp	573302-003
	Circuit Breaker, 3-Pole, 30 Amp	573303-005
	Circuit Breaker, 3-Pole, 40 Amp	573304-001
6	Tap Switch Assembly, Lamp Current Adjustment	111972-002
7	Tilt Adjustment Lock Bolt (2)	515500-177
8	Leveling Foot (4)	520650-003
9	Blower *(SLC 20, 30)*	598931-548
	Blower *(SLC 40,45, 70)*	598931-645
10	Reflector, 2000 - 3000 W	195206-003
	Reflector, 4000, 4500 W	195891-001
	Reflector, 4500 W (Reference)	195710-001
	Reflector, 7000 W	195572-002
11	Snood *(SLC 20, 30)*	195741-001
	Snood *(SLC 40,45,70))*	195415-001
12	Positive Lamp Connector	191925-001
13	Projector Bracket *(SLC 20, 30)*	195303-001
	Projector Bracket *(SLC 40, 45, 70)*	195738-001
14	Projector Alignment Adjustment Screw	515500-141
15	Douser Handle	192121-001
16	Guard Air Intake	195684-001
17	Power Supply CCX30-02, 208/230 VAC, 60 Hz	195463-010
	Power Supply CCX30-34Z, 380/415 VAC, 50 Hz	195463-004
	Power Supply CCX40-02, 208/230 VAC, 60 Hz	195464-010
	Power Supply CCX40-34Z, 380/415 VAC, 50 Hz	195464-004
	Power Supply CCX70-02, 208/230 VAC, 60 Hz	195556-010
	Power Supply CCX70-34Z, 380/415 VAC, 50 Hz	195556-004

Table A-2: Parts List for SLC Xenon Lamp Console (Front View)

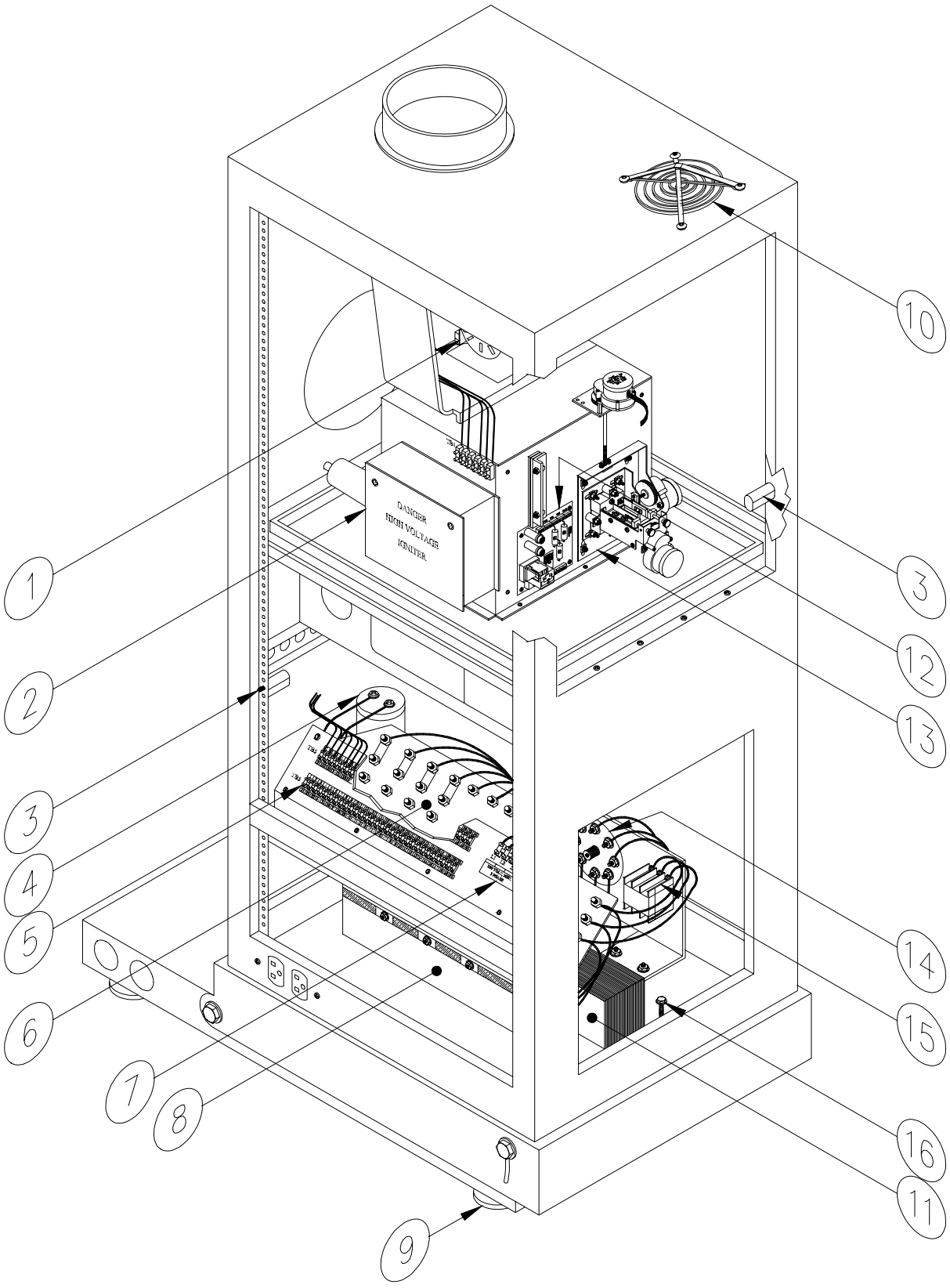
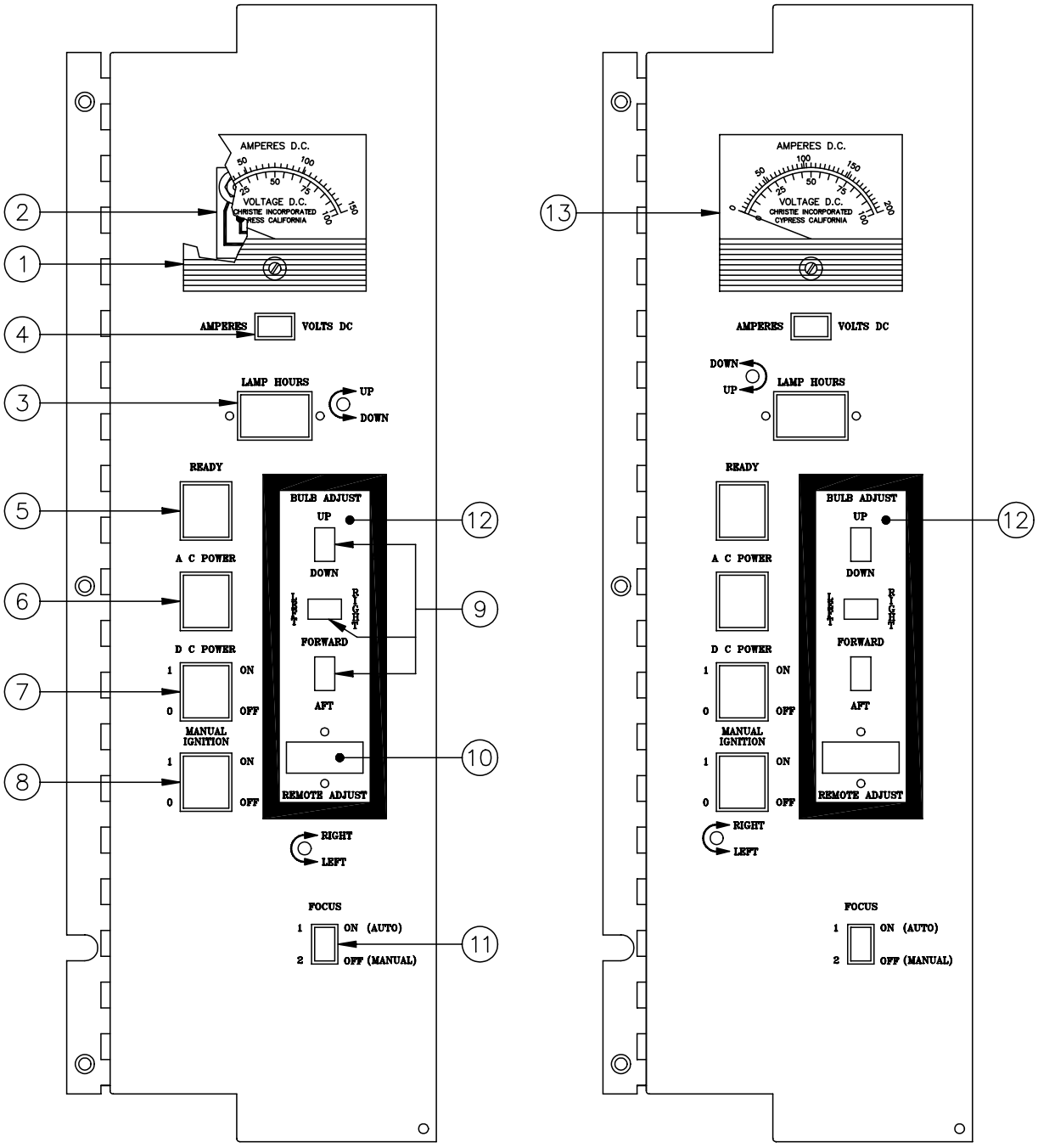


Figure A-3: SLC Xenon Lamp Console (Rear View)

#	Description	Part Number
1	Air Switch 1600 Assembly	195557-001
2	Igniter, IGA-10	116715-001
	Igniter, IGA-15M	117124-001
3	Door Interlock Switch	578000-034
4	Capacitor *(SLC 20, 30)*	530106-302
	Capacitor *(SLC 40, 45, 70)*	530122-009
5	Terminal Strip, with Wire Guard	586211-001
6	Control Assembly, 60 Hz *(SLC 20, 30)*	114173-002
	Control Assembly, 50 Hz *(SLC 20)*	114173-011
	Control Assembly, 50 Hz *(SLC 30, 40, 45, 70)*	114173-010
	Control Assembly, 60 Hz *(SLC 40, 45, 70)*	114173-001
7	Power Input Terminal, 55 Amp	586210-601
8	Heat Sink Assembly *(SLC 20, 30)*	114109-002
	Heat Sink Assembly *(SLC 40, 45, 45R, 70)*	195569-001
9	Leveling Foot (4)	520650-003
10	Fan Guard, 4.5 x 0.200/0.600 in DP	598931-496
11	Transformer, 208/230 VAC, 60 Hz (T1)*(SLC20/30)*	195773-001
	Transformer,380/415 VAC50/60Hz(T1)*(SLC20/30)*	195773-004
	Transformer, 208/230 VAC, 60 Hz (T1) *(SLC 40)*	195774-001
	Transformer, 380/415 VAC,50/60Hz (T1) *(SLC 40)*	195774-004
	Transformer,208/230 VAC,60 Hz (T1) *(SLC 45/70)*	195775-001
	Transformer,380/415 VAC50/60Hz(T1)*(SLC45/70)*	195775-004
	Transformer,208/230VAC,60Hz(T1)*(SLC45R/70R)*	195775-001
	Transformer, 380/415 VAC, 50/60 Hz (T1) *(SLC45R/70R)*	195775-004
12	PCB Assembly, Lamp Adjustment	195315-001
	PCB Assembly, Lamp Adjustment	195315-002
13	Xenon Lamp Adjustment, Manual	195800-001
	Xenon Lamp Adjustment, Motorized	195800-002
	Xenon Lamp Adjustment, Auto-Focus, Motorized	195800-003
	Xenon Lamp Adjustment, Auto-Focus, Manual	195800-004
	Xenon Lamp Adjustment, Motorized, Manual	195800-005
14	Tap Switch Assembly, Lamp Current Adjustment	111972-002
15	Contactor, Relay *(SLC 20, 30), 120V*	571340-006
	Contactor, Relay *(SLC 40, 45, 70), 120V*	571340-008
	Contactor, Relay *(SLC 20, 30), 230V*	571340-007
	Contactor, Relay *(SLC 40, 45, 70), 230V*	571340-009
16	Console Tilt Option	195535-001

Table A-3: Parts List for SLC Xenon Lamp Console (Rear View)



SLC 20, 30 **SLC 40, 45, 70**

Figure A-4: Control Panel

#	Description	Part Number
1	Meter, 150 Amp, 100 VAC	535112-321
2	Volt/Ampere PCB, Assembly	195643-001
3	Timer-Elect, 100 Khr, 120 VAC, 60 Hz	581399-008
	Timer-Elect, 100 Khr, ET, 120 VAC, 60 Hz	581399-015
	Timer, Electric, 100 Khr, ET, 120 VAC, 50 Hz	581399-016
	Timer, Electric, 100 Khr, ET, 240 VAC, 60 Hz	581399-017
4	Switch, Rocker, SPDT, ON/MOM ON	578712-002
5	Indicator, Green Lens, Modified, 120 VAC	195138-001
	Indicator, Green Lens, 250 VAC	546700-054
6	Indicator, Amber Lens, Modified, 380 VAC	195139-001
	Indicator, Amber Lens, Modified, 440 VAC	195139-002
	Indicator, Amber Lens, White Base	546700-038
7	Switch, Rocker, DPST ON/OFF, 125 VAC, 10 Amp	578900-026
8	Switch, Rocker, DPST; MOM ON, 25 VAC, 10 Amp	578900-027
9	Switch, Rocker, SPDT; MOM, Center OFF	578900-040
10	Terminal Receptacle, with Angle Brackets	524310-006
11	Switch, Rocker, SPDT; ON/ON, 120 VAC, 5 Amp	578900-042
12	Control Panel, Manual	195756-001
	Control Panel, Motorized, Auto-Focus	195756-002
	Control Panel, Motorized Manual and Auto-Focus Manual	195756-003
13	Meter, 200 Amp, 100 VAC	535112-317

Table A-4: Parts List for Control Panel

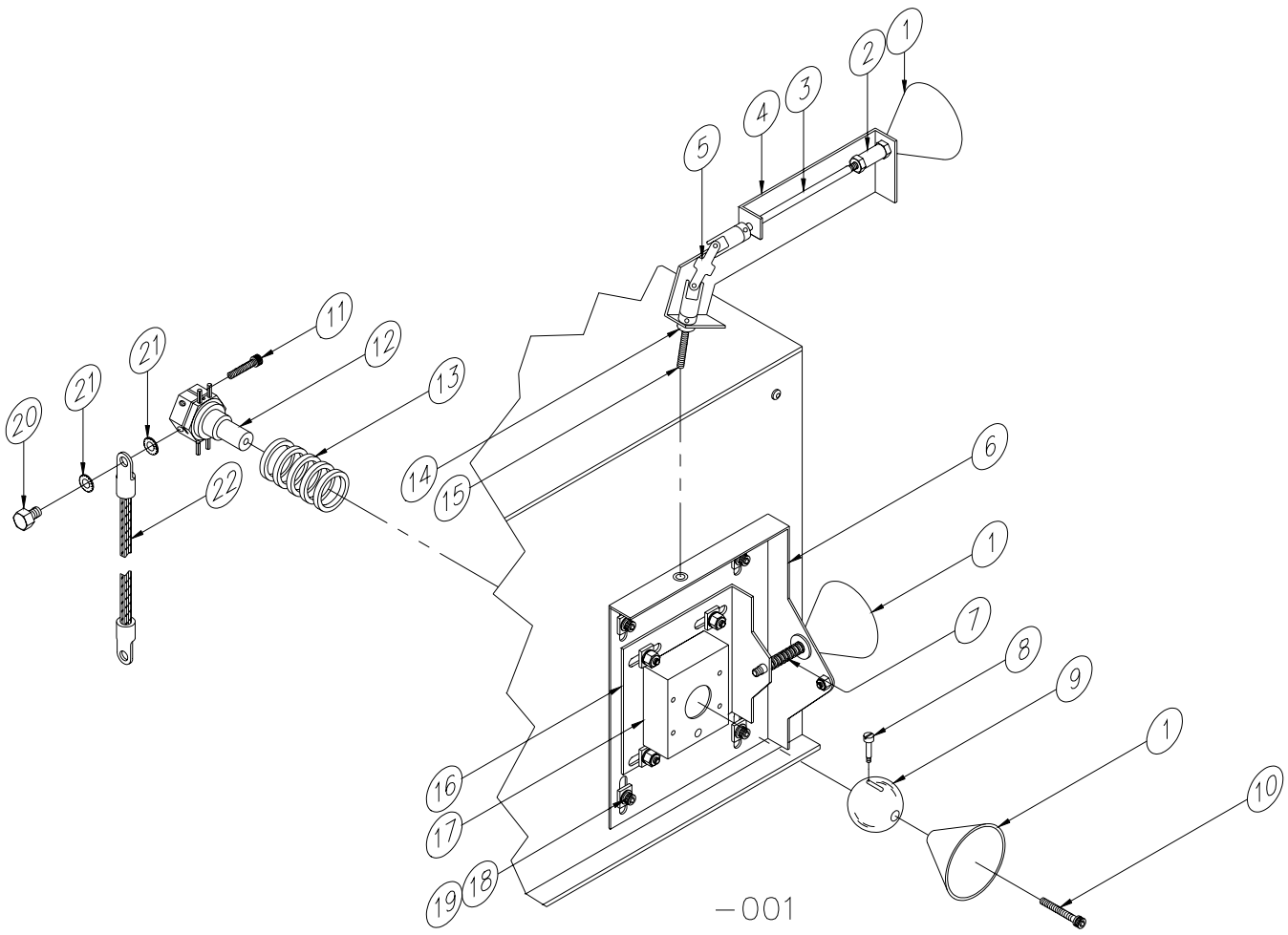


Figure A-5: Manual Lamp Adjustment Assembly

#	Description	Part Number
1	Adjustment Guide	193571-001
2	Standoff, Female	598931-523
3	Lamp Adjustment Screw, 4.85 in L	195145-003
4	Bracket Vertical Adjustment	195499-001
5	Universal Joint	598931-554
6	Plate, Vertical Adjustment	195758-001
7	Compression Spring 20 COIL	515610-047
8	Screw, Shoulder, 4-40 x 0.5 in L	598931-619
9	Pivot Ball	194512-002
10	Screw, Socket Head Cap, 8-32 x 1.25 in L	--
11	Screw, Socket Head Cap, 10-32 x 0.625 in L	598931-049
12	Rear Adapter, Lamp	194513-003
13	Compression Spring, 1.094 OD	515610-046
14	Collar, Metal	598931-553
15	Lamp Adjustment Screw, 1.73 in L	195145-004
16	Horizontal Adjustment Plate	195753-001
17	Box Horizontal Adjustment	195752-001
18	Shoulder Washer	515000-002
19	Spring Washer	515801-202
20	Screw, Hex Head 1/4 –20 x .375 in L	-
21	Star Washer, ¼”	-
22	Flex Braid Negative Lamp Lead *(CXC)*	195224-002

Table A-5: Parts List for Manual Lamp Adjustment Assembly

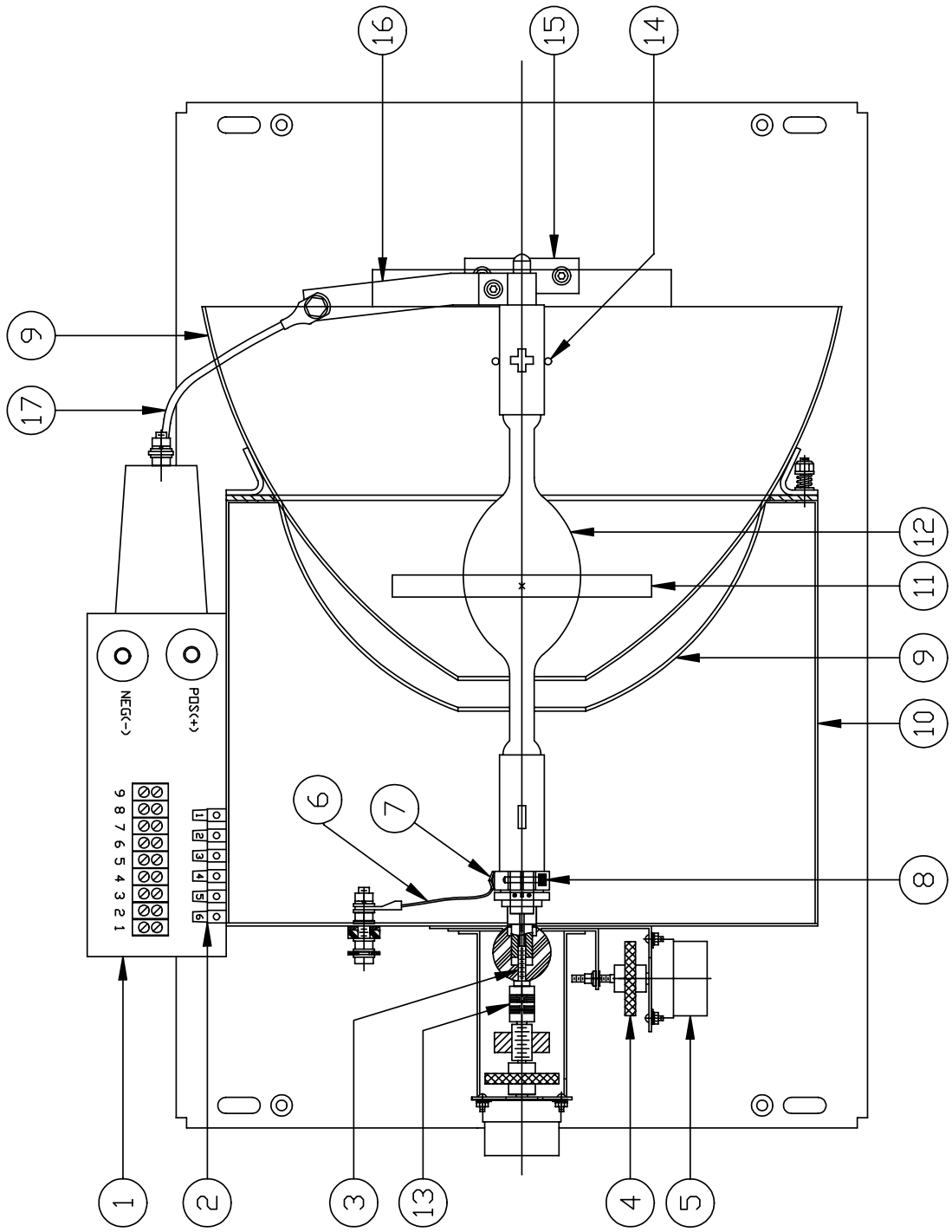


Figure A-6: Plenum , All Models (Top View)

#	Description	Part Number
1	Igniter, IGA-10	116715-001
	Igniter, IGA-15M	117124-001
2	Terminal Board, TB4	586210-602
3	Focus Screw	195182-001
4	Wheel, Manual Lamp Adjustment	195190-001
5	Motor, Synchronous, Lamp Adjustment, 50 RPM	582000-002
6	Flex Braid Negative Lamp Lead *(SLC)*	195224-002
7	Negative Lamp Connector	194513-003
8	Allen Screw, #8-32 x 0.75 in L	598931-046
9	Reflector, 2000-3000 W Lamp *(SLC 20, 30)*	195206-003
	Reflector, 4000 W *(SLC 40, 45)*	195891-001
	Reflector, 4500 W *(SLC 45R)*	195710-001
	Reflector, 7000 W *(SLC 70)*	195572-001
10	Cover Support, Plenum	195171-001
	Front Support, Plenum	195172-001
11	Magnet, Arc Stabilizer	515000-092
12	Xenon Lamp, 7000 W *	CXL-70
	Xenon Lamp, 1600 W Adapter *	CXL-16S
	Xenon Lamp, 2000 W *	CXL-20
	Xenon Lamp, 3000 W *	CXL-30
	Xenon Lamp, 4000 W *	CXL-40
	Xenon Lamp, 4500 W *	CXL-45
	Xenon Lamp, 6000 W *	CXL-60
13	Shaft Coupling	195532-001
14	Lamp Support Arm	193959-001
15	Insulator, Lamp Support	193958-002
16	Forward Adapter, Positive Connector	191925-001
17	Lamp Lead, Positive Connector *(SLC 20,30,40, -45, 70)*	195224-002
	*** Specify SLC model number when ordering.**	

Table A- 6: Parts List for Plenum, All Models (Top View)

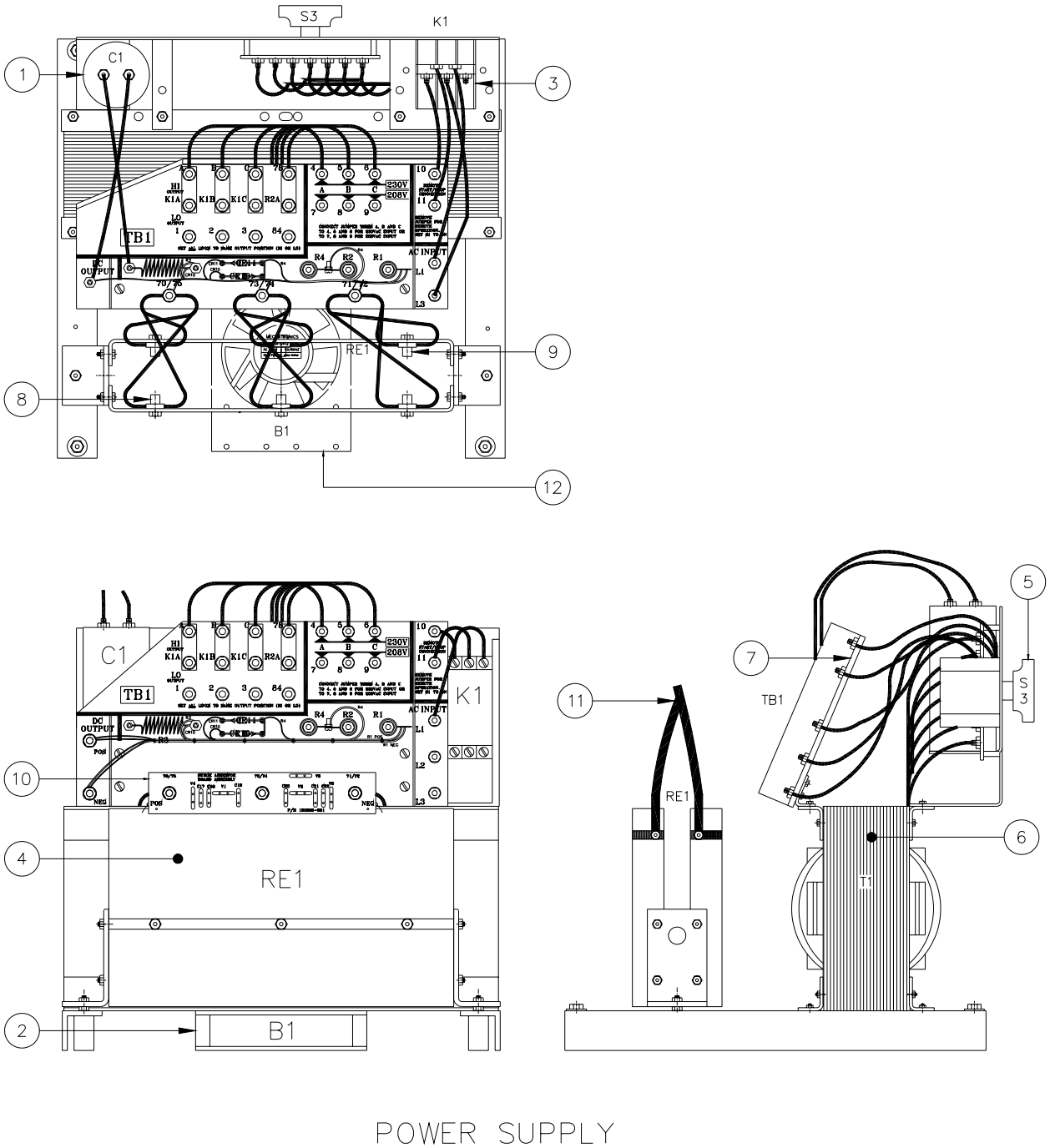


Figure A-7: Power Supply

#	Description	Part Number
1	Capacitor (C1) *(SLC 20, 30)*	530106-302
	Capacitor (C1) *(SLC 40, 45, 70)*	530122-009
2	Blower, Fan, SLC (B1)	522000-001
3	Contactor, Relay (K1) 120V, *(SLC 20, 30)*	571320-001
	Contactor, Relay (K1) 120V, *(SLC 40,45,45R,70)*	571340-004
	Contactor, Relay (K1) 230V, *(20/30)*	571320-002
	Contactor, Relay (K1) 230V,*(SLC 40,45,45R,70)*	571340-003
4	Heat Sink Assembly, (RE1) *(SLC 20, 30,)*	114109-002
	Heat Sink Assembly (RE1) *(SLC 40, 45, 45R, 70)*	195569-001
5	Tap Switch Assembly, Lamp Current Adjustment	111972-001
6	Transformer, 208/230 VAC, 60 Hz (T1) *(SLC 20/30)*	195773-001
	Transformer, 380/415 VAC, 50/60 Hz (T1) *(SLC 20/30)*	195773-004
	Transformer, 208/230 VAC, 60 Hz (T1) *(SLC 40)*	195774-001
	Transformer, 380/415 VAC, 50/60 Hz (T1) *(SLC 40)*	195774-004
	Transformer, 208/230 VAC, 60 Hz (T1) *(SLC 45/70)*	195775-001
	Transformer, 380/415 VAC, 50/60 Hz (T1) *(SLC 45/70)*	195775-004
	Transformer, 208/230 VAC, 60 Hz (T1) *(SLC 45R/70R)*	195775-001
	Transformer, 380/415 VAC, 50/60 Hz (T1) *(SLC 45R/70R)*	195775-004
7	Control Assembly, 60 Hz (TB1) *(SLC 40, 45, 7/*	114173-001
	Control Assembly, 60 Hz (TB1) *(SLC 20, 30)*	114173-002
	Control Assembly, 50 Hz (TB1) *(SLC 30, 40, 45, 70)*	114173-010
	Control Assembly, 50 Hz (TB1) *(SLC 20)*	114173-011
8	Diode, Reverse Polarity, Negative (-), 1000V, 150 Amp	541108-010
	Diode, Reverse Polarity, Negative (-), 1400V, 85 Amp	541109-004
9	Diode, Normal Polarity, Positive (+), 1000V, 150 Amp	541108-009
	Diode, Normal Polarity, Positive (+), 1400V, 85 Amp	541109-003
10	Surge Arrester Board Assembly	195390-001
11	DC Cable Kit *(SLC 20, 30, 40)*	194657-001
	DC Cable Kit *(SLC 45, 45R, 70)*	

Table A-7: Power Supply

Appendix B

Appendix B: Additional Diagrams

Appendix B contains additional support information in the form of circuit diagrams for the console system (inserts), igniters, and front and side views of the SLC Console, including dimensions.

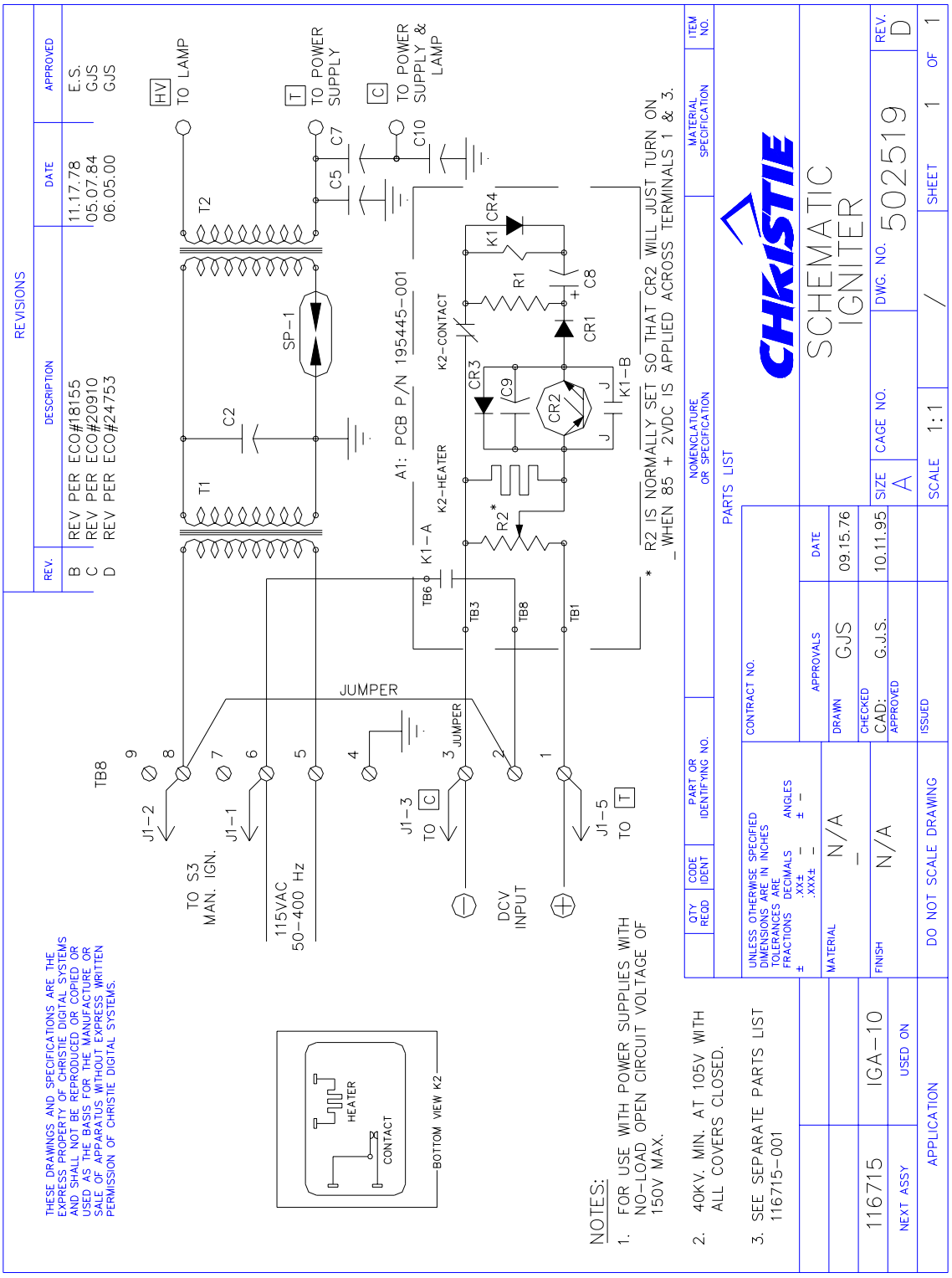


Figure B-1: Schematic Diagram for IGA-10 Igniter (P/N 502519)

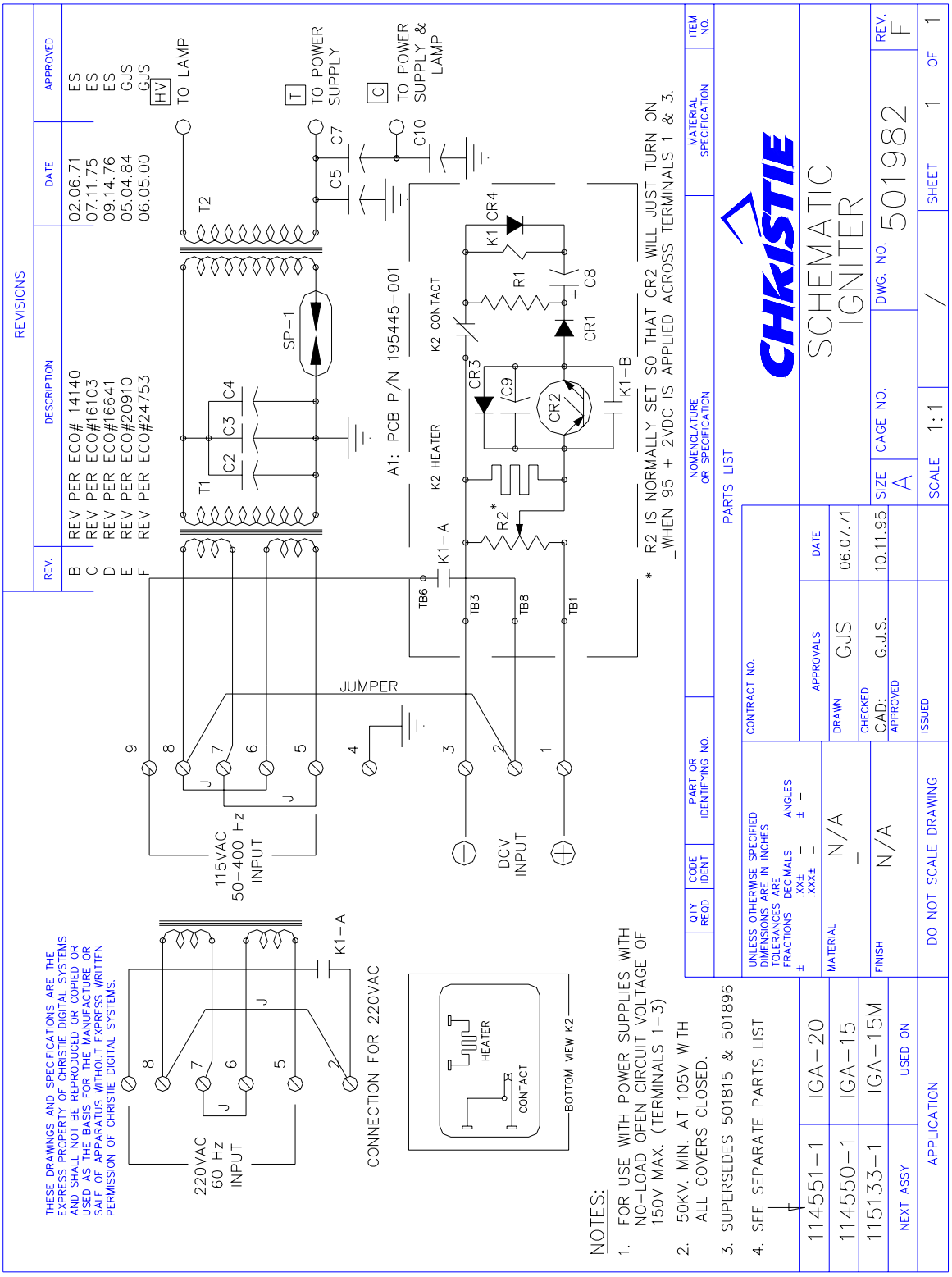


Figure B-2: Schematic Diagram for IGA-15M Igniter (P/N 501982)

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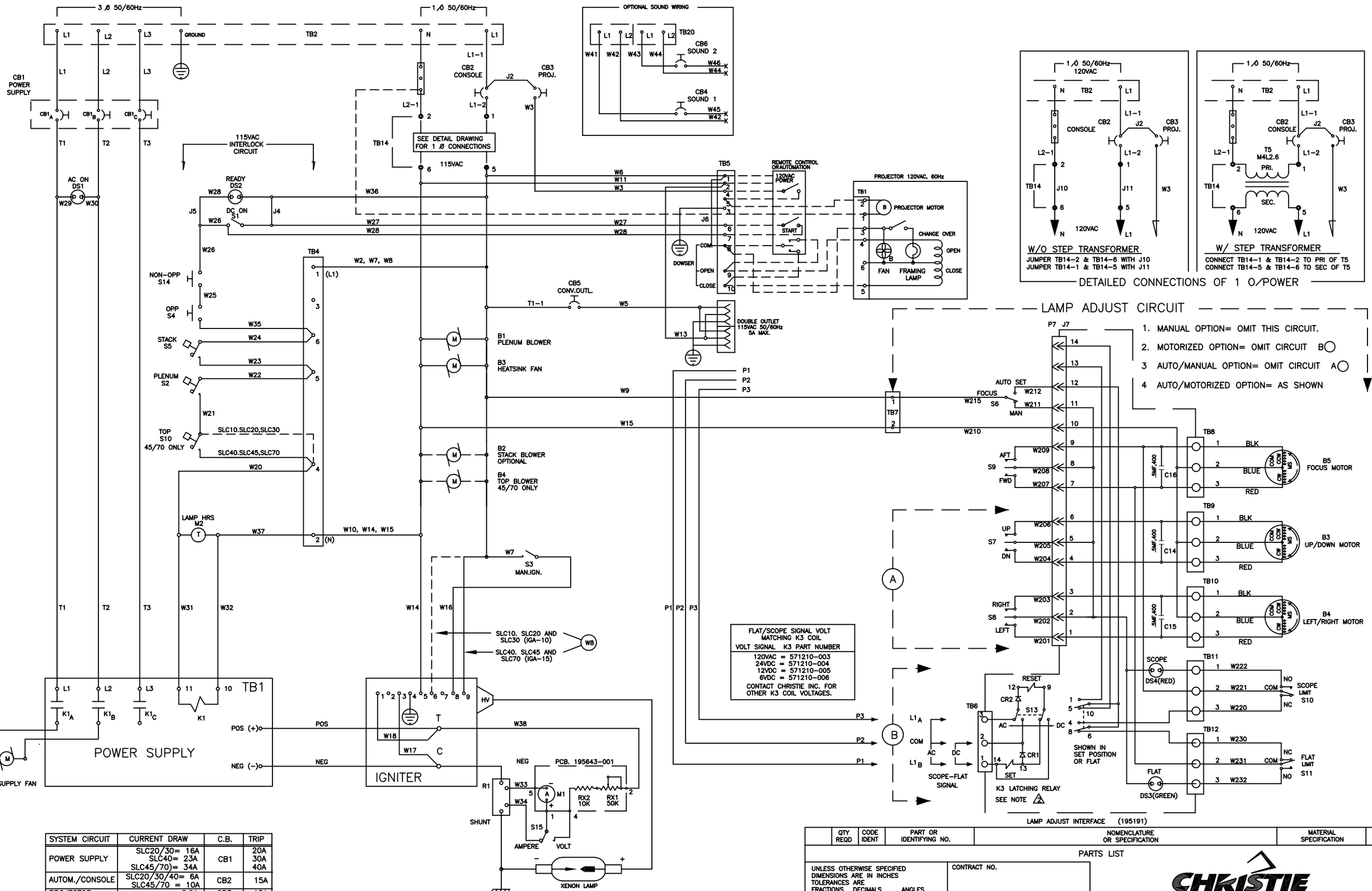
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	ORIGINAL ISSUE	10.15.01	GJS
	B	REV PER ECO #25341	04.08.04	JL
	C	ECO #25493 –B5 FAN PWR	06.02.04	GVB



1 Ø 50/60Hz 120VAC

W/O STEP TRANSFORMER

JUMPER TB14–2 & TB14–6 WITH J10
JUMPER TB14–1 & TB14–5 WITH J11

1 Ø 50/60Hz

W/ STEP TRANSFORMER

CONNECT TB14–1 & TB14–2 TO PRI OF T5
CONNECT TB14–5 & TB14–6 TO SEC OF T5

DETAILED CONNECTIONS OF 1 Ø POWER

SYSTEM CIRCUIT	CURRENT DRAW	C.B.	TRIP
POWER SUPPLY	SLC20/30= 16A SLC40= 23A SLC45/70)= 34A	CB1	20A 30A 40A
AUTOM./CONSOLE	SLC20/30/40= 6A SLC45/70 = 10A	CB2	15A
PROJECTOR	2.9A	CB3	15A
SOUND SYSTEM	2 X 25A	CB4/CB6	30A
CONV. OUTLET	5A	CB5	15A

NOTES: UNLESS OTHERWISE SPECIFIED

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR SPECIFICATION	MATERIAL SPECIFICATION	ITEM NO.

PARTS LIST

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE
FRACTIONS ± DECIMALS .XX± – .XXX± – ANGLES ± –

CONTRACT NO.

SLC	115VAC I/L
NEXT ASSY	USED ON
APPLICATION	

MATERIAL N/A –

FINISH N/A –

DO NOT SCALE DRAWING

APPROVALS	DATE
DRAWN GJS	10/16/01
CHECKED	
APPROVED	
ISSUED	

CHRISTIE

UNIVERSAL SCHEMATIC SLC 115V INTERLOCK

SIZE	CAGE NO.	DWG. NO.	REV.
C		503478	C

SCALE 1:1 SHEET 1 OF 1

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SYSTEM CIRCUIT	CURRENT DRAW	CIRCUIT BREAKER	
AUTOM./CONSOLE	SLC20/30/40= 6 A SLC45/70 = 10 A	CB2	15A
PROJECTOR	2.9A	CB3	15A
CONV. OUTLET	5 A	CB5	15A
SOUND SYSTEM	2 X 25 A	CB4/CB6	30A
POWER SUPPLY	SLC20/30/40= 26 A SLC45/70)= 36 A	CB1	30A 40A

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	ORIGINAL ISSUE	05.20.93	GJS
	B	REV. PER ECO# 23406	05.20.93	GJS
	C	REV. PER ECO# 23479	05.26.94	GJS
	D	REV. PER ECO# 23494	06.20.94	GJS
	E	REV. PER ECO# 23549	10.04.94	GJS
	F	REV. PER ECO# 23752	03.02.96	GJS
	G	REV. PER ECO# 24108	07.08.98	GJS
	H	REV. PER ECO# 24211	01/28/99	GJS
	J	REV. PER ECO# 24338	07/13/99	GJS
	K	REV. PER ECO# 24636	02.22.00	GJS
	L	REV. PER ECO# 24911	05.29.01	GJS

380/415 VAC 50/60Hz, 3Ø

GROUND L1 L2 L3 TB2

240VAC 1 Ø 50Hz

OPTIONAL SOUND WIRING

TB20 CB4 SOUND1 CB6 SOUND2

CB1A CB1B CB1C

CB2 CONSOLE AUTOMATION

CB3 PROJECTOR

CB5 CONV. OUTLET

FOR CHRISTIE AW SYSTEMS USE ONLY.

T5 M4L2.6

PLENUM S2 STACK S5 OPP S4 NON-OPP S14 READY DS2 DC ON S1

AC ON DS1 LAMP HRS M2 K1

TB1-11 TB1-10 TB4-

K1A K1B K1C

TB5 REMOTE CONTROL AUTOMATION 120VAC POWER START

PROJECTOR 220VAC, 50Hz

TB1 PROJECTOR MOTOR CHANGE OVER FAN FRAMING LAMP OPEN CLOSE

TB2 REMOTE CONTROL OR AUTOMATION PROJECTOR

CB3A CB3B CB3C PROJECTOR MOTOR

ALTERNATIVE WIRING FOR 3 PHASE PROJECTOR MOTOR.

DOWSER OPEN CLOSE

OUTPUT HI LO

380 V 415 V

T1

MANUAL START AUTO START

TB4-2 (N) TB4-1 (L1)

B1 PLENUM BLOWER

B3 HEATS. FAN

B2 STACK BLOWER

V1 130L20B V2 130L20B V3 130L20B V4 130L20B V5 130L20B

CR1 CR2 CR3 CR4 CR5 CR6

CR10 1N5404 CR11 1N5404

SURGE ARRESTOR BOARD ASS'Y 195390-001

C17 C18 C19 C20 C21 C22 C17-C22 .005MF 3KV

R1 2K, 12 R2 R3 R4

C1 C8 .05, 500

POS (+) NEG (-)

POWER SUPPLY D.C. OUTPUT

IGA IGNITER C T HV

MAN IGN S3

SLC10, SLC20 AND SLC30

SLC40, SLC45 AND SLC70

R1 SHUNT M1 XENON LAMP

NOTE:
1. FOR 120V AC SCOPE-FLAT SIGNAL P/N OF K3 IS 571210-003
2. FOR 24V DC SCOPE-FLAT SIGNAL P/N OF K3 IS 571210-004.
3. CONTACT CHRISTIE FOR OTHER SCOPE-FLAT INPUT SIGNALS.

LAMP ADJUST REMOTE CONTROL 195317-001

L1A A.C. COM L1B D.C. SCOPE-FLAT SIGNAL

TB6 RESET CR2 S13 AC DC CR1 SET SHOWN IN SET POSITION OR FLAT

K3 LATCHING RELAY

LAMP ADJUST INTERFACE (195191)

SCOPE DS4(RED) FLAT DS3(GREEN)

TB11 W222 W221 W220 SCOPE LIMIT S10

TB12 W230 W231 W232 FLAT LIMIT S11

LAMP ADJUST CIRCUIT

1. MANUAL OPTION= OMIT THIS CIRCUIT.
2. MOTORIZED OPTION= OMIT CIRCUIT B
3. AUTO/MANUAL OPTION= OMIT CIRCUIT A
4. AUTO/MOTORIZED OPTION= AS SHOWN

P7 J7

BLACK WHITE W215 TB7

AUTO SET FOCUS S6 MAN

W212 W211 W210 W209 W208 W207 W206 W205 W204 W203 W202 W201

AFT S9-1 FWD UP S7-1 DN RIGHT S8-1 LEFT

TB8 BLK BLUE RED B5 FOCUS MOTOR

TB9 B3 UP/DOWN MOTOR

TB10 B4 LEFT/RIGHT MOTOR

C16 C14 C15 .5MF,400

ALTERNATIVE WIRING FOR VOLT/AMP METER

PCB. 195643-001 RX2 10K RX1 50K AMPERE VOLT S15

△6 R3 = #15 NICHROME, 22" FOR SLC10
R3 = #14 NICHROME, 19" FOR SLC20
R3 = #15 NICHROME, 13.5" FOR SLC30
R3 = #12 NICHROME, 9" FOR SLC40

△5 C1 = 6000MF, 160V FOR SLC10, SLC20 AND SLC30
C1 = 22000MF, 160V FOR SLC40

△4 R2 AND R4:
CONNECTED SERIES SLC10, SLC20, 50 OHM, 50 WATT
CONNECTED SERIES SLC30, 50 OHM, 50 WATT
CONNECTED PARALLEL SLC40, 50 OHM, 50 WATT

△3 CR1, CR2 AND CR3=85HFR100 FOR SLC10, SLC20 AND SLC30
CR1, CR2 AND CR3=150KR60A FOR SLC40

△2 CR4, CR5 AND CR6=85HF100 FOR SLC10, SLC20 AND SLC30
CR4, CR5 AND CR6=150K60A FOR SLC40

1. AS SHOWN CONSOLE IS SET IN HI-OUTPUT FOR ~~380~~ VAC 3 Ø INPUT AND CONNECTED FOR AUTOMATIC STARTING

NOTES: UNLESS OTHERWISE SPECIFIED

QTY REQD	CODE IDENT	PART OR IDENTIFYING NO.	NOMENCLATURE OR SPECIFICATION	MATERIAL SPECIFICATION	ITEM NO.
PARTS LIST					

SLC40-Z34	
SLC30-Z34	
SLC20-Z34	
SLC10-Z34	
NEXT ASSY	USED ON
APPLICATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE
FRACTIONS ± DECIMALS .XX± .XXX± ANGLES ±

MATERIAL N/A

FINISH N/A

DO NOT SCALE DRAWING

CONTRACT NO.

APPROVALS	DATE
DRAWN GJS	05.20.93
CHECKED	
APPROVED	
ISSUED	

CHRISTIE

SCHEMATIC
SLC 380/415V, 50/60HZ

SIZE	CAGE NO.	DWG. NO.	REV.
C		503335	L

SCALE 1:1 SHEET 1 OF 1

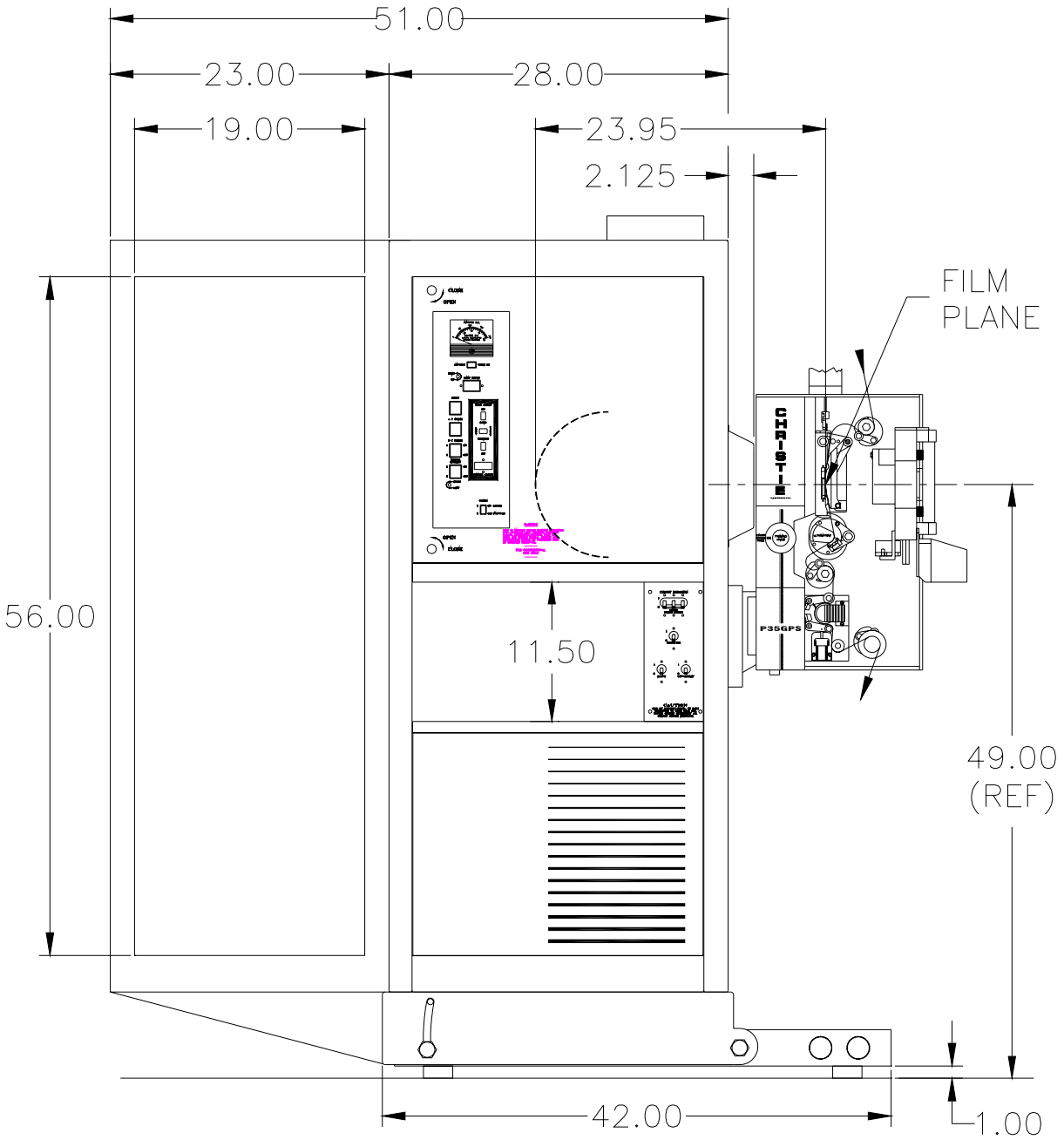

Figure B-3: SLC 20-CC20, SLC 30-CC25 Console (Side View)

(P35 Projector head shown for reference)

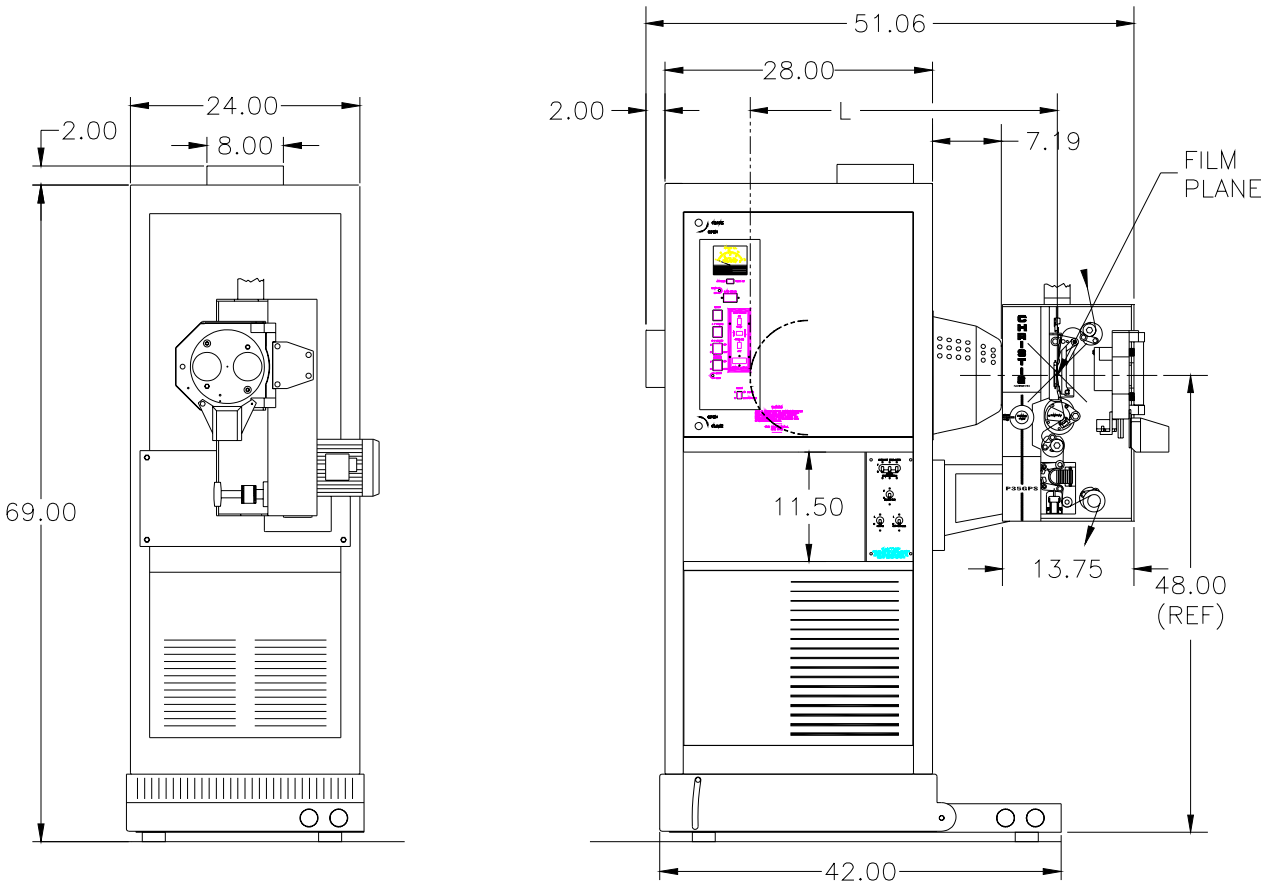

Figure B-4: Console SLC 40-CC40, SLC 45-CC70, SLC 70-CC70

(P35 projector head shown for reference)